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AUTHOR Blattner, Bruce E.; And Others
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ABSTRACT

This guide comprises a summary of the development of and materials for use in the implementation of a research-verified model training program to help high-risk students complete postsecondary education programs. Discussed first is the original pilot project that was implemented to serve the high-risk postsecondary vocational students entering the health occupations courses at Missoula Vocational Technical Center (MVTC) in Missoula, Montana. The second chapter describes the success of the pilot project in helping 116 of the 175 participants in the prevocational program to complete it successfully. Addressed next are reasons for prevocational programs, components of such programs in relation to the importance of flexibility, and concerns and pitfalls in implementing prevocational education. The fourth chapter, a program model, consists of course outlines, course objectives, day-by-day teaching schedules, procedures for identifying high-risk students and enrolling them in prevocational programs, and exit interview procedures for use in the following subject areas: reading, study skills, mathematics, and career counseling. Appendixes to the guide include sample program correspondence, pre- and posttest data on MVTC program participants, ground rules for learning groups and for group counseling, a career awareness scale, a sample health occupations course pretest, and a bibliography. (MN)

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A POST SECONDARY PREVOCATIONAL EDUCATION MODEL: A GUIDE FOR IMPLEMENTATION

A RESEARCH VERIFIED TRAINING PROGRAM TO HELP THE HIGH-RISK STUDENT COMPLETE POST SECONDARY EDUCATION

by
Bruce E. Blattner, Jim Wenderoth, Ed R. Moore
General and Related Education Department
Missoula Vocational Technical Center
Missoula, Montana

June 1984

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ORIGINAL PROJECT ABSTRACT

Title: A Prevocational Pilot Program to Assist High-Risk Post Secondary Vocational Students in Preparation for Successful Post Secondary Vocational Training

Objectives: The program will enable the high-risk post secondary vocational student to:

a. compete successfully in the program of his choice at the time of program entrance;
b. develop study skills and study habits prior to program entrance;
c. assess his own aptitudes and program readiness prior to program entrance;
d. change and/or reevaluate his program choice prior to program entrance;
e. choose from a wide range of training or occupational options should the high-risk student decide to reconsider program choice;
f. learn to cope with and/or deal with problems associated with post secondary vocational education prior to entrance, such as
   (1) living on a school budget
   (2) living on financial aid
   (3) dealing with school-related family problems
   (4) handling transportation problems
   (5) finding part-time work.

PROCEDURES: The pilot project will serve the high-risk post secondary vocational students entering Missoula Vocational Technical Center's health occupations (Licensed Practical Nursing, Respiratory Therapy Technology, Surgical Technology), Electronics, and Forestry Technology programs. The students will be pretested at least 16 weeks prior to their scheduled entrance into a program. Those students identified by pretesting as high-risk students will be offered at least one quarter of prevocational training prior to program entrance.

The Prevocational Program will consist of 200 hours of basic academic skills instruction.* (Basic Math, Reading, Basic Communications, and Written Communications), 100 hours of study skills instruction, listening, learning and memory tips, note-taking, outlining, and test taking), and 50 hours of guidance and counseling (achievement, interest and aptitude testing, motivational instruction, career guidance

*As the Prevocational Program has evolved over the past three years, we have determined that 120-150 hours over a 30-day period (30 consecutive working days) are adequate for delivery of the program in its entirety.

(including nontraditional career options), and school-related problem solving assistance.

The program will be an interdepartmental offering of Missoula Vocational Technical Center. The General and Related Education Department will coordinate the program and offer additional instruction in both the academic skills areas and the study skills area. Student Services and General Education Department will provide some of the career guidance, personal counseling, testing services, and placement.

The Basic Education Department (Learning Center) will provide some reading instruction.

Expected Outcome: If the proposed three-year pilot program proves successful, the Prevocational Program could be adopted by other Montana Vocational Technical Centers. The Prevocational Program would also cut down, by at least 50 percent the number of students dropping out of a program in which they have little chance of success.

PREFACE

The following manuscript is the result of hundreds of hours of work completed by many capable educators. Hopefully, this text will explain our prevocational education program and serve as a resource guide for those starting their own programs.

Our mistakes have taught us well, and although many questions remain unanswered, we feel that some underlying principles have been formulated. We hope some of our readers will further develop these principles and help us gain more insight into the concepts of prevocational education.

Without the dedication, energy, and faith of the following educator friends, this research effort would not have been possible: Jim Taylor gave Bruce the idea and encouragement to try to develop a program to help solve the dropout problem at Missoula Vocational Technical Center in 1976; Malcolm Woodard developed the data collection and interpretation instruments that allowed us to utilize a computer in gathering statistics; Jim "Curly" Burns helped convince the Office of Public Instruction to award us a research grant; Barbara Crebo stuck with us and strongly supported the grant after Curly left; Terry Hetrick's dissertation and criticisms helped keep us on track; Joan Jackson's papers on the subject gave us additional insights; Dennis Lerum and Thomas Downey (MVTC directors) provided us the time, space, and institutional support; George Martin's knowledge of MVTC programs was indispensable, and his many hours of work on pretests was

essential. In addition, we want to thank the MVTC administrators, staff, and faculty for their countless insights and hours of work.

One last note, without the expert services of our secretary, Sharon Todd, this whole effort would not have been possible. We thank you all!!

Bruce E. Blattner
Program Supervisor/Counselor/Instructor

Jim Wenderoth
Program Counselor/Instructor

Ed R. Moore
Program Reading Specialist/Instructor

INTRODUCTION

This manuscript is divided into four chapters: Chapter I deals with the problem, history of the project, the research, philosophy, hypothesis, objectives, and methods. Chapter II contains the results of the project to date (June 1984), similar in scope and content to a research design. Chapter III concerns information we have found that can be helpful to others wishing to implement a prevocational program. In Chapter III we share the mistakes we made in developing this program; we can save the reader some time and effort. We also provide information on those aspects of prevocational education that worked well for us. Chapter IV consists of a model Prevocational Program developed and implemented by the authors.

Our post secondary prevocational efforts of the past eight years are summarized in the following pages. It has been a labor of love for us, and a large part of our professional energy has gone into this project. Therefore, this writing is somewhat like examining the life of a loved one under a microscope. Each beautiful characteristic and each flaw seem exaggerated. We believe our efforts were worthwhile--hence the writing! But the flaws and unanswered questions haunt us and keep our enthusiasm somewhat in check. We hope you see some merit in our efforts, and we would be happy to listen to your suggestions for improving our Prevocational Program. We are also interested in other efforts directed toward solving dropout problems in post secondary education.

CHAPTER I

PROBLEM, HISTORY, RESEARCH, PHILOSOPHY, HYPOTHESIS, AND METHODS

PROBLEM

A major problem in post secondary education today is that of finding ways to reduce the student dropout rates. That problem is particularly acute in community colleges and post secondary vocational schools where student populations show more diversity than those of universities in areas such as ethnic background, economic groups, and learning ability (Mink, 1976).

Research indicates that failure to complete post secondary vocational training looms as one of America's critical educational problems (Mink & Kaplan, 1970; Roueche, 1972; Mink & Roueche, 1974).

A 1973 Texas study found that only 57 percent of post secondary vocational students completed their post secondary vocational programs (Appel, Roueche, Mink, 1977). According to John Roueche, who co-authored a study of high-risk community college students, the average community college entrant reads somewhere between the eighth and ninth grade level--if he finished high school!! And if Texas is fairly representative of the nation, we can generalize that 20-25 percent of all community college entrants are functionally illiterate, i.e., or reading below the fourth grade level (Roueche, 1978).

Nationally, 50 percent of those who start post secondary vocational programs never complete them (Grant, 1976).

This is due, in part, to the open entry policy. W. Moore Jr. in a 1970 publication, Against the Odds, said:

> The term open door policy is hypocritical rhetoric if the student, regardless of his level of achievement, (does not) receive the best education possible in the college

commensurate with his needs, efforts and abilities (Appel, Roueche, Mink, 1977).

This open door policy used by most community colleges and vocational schools gives credence to a quote once observed on an instructor's desk, "The greatest injustice of all is the equal treatment of unequals." In looking more closely at the dropout problem it becomes apparent that academic deficits are not the only problems for these students.

These dropouts (hereafter referred to as high-risk students) are often characterized as having "failure-identities," as well as academic deficiencies; they have little if any confidence in their ability to complete or succeed in academic programs (Roueche, 1978). Closer examination of high-risk students reveals what is known as the clustering effect.

The clustering effect suggests that high-risk students statistically have a higher than per-capita chance of being subject to many social problems.

> Studies of social pathology have clearly demonstrated the clustering of such problems as poverty, unemployment, under education, residential mobility, inadequate housing, delinquency and crime, marital incompatibility, divorce, alcoholism, mental illness, and poor health (Straus, 1965).

Unfortunately, the deck is stacked against high-risk post secondary students. In addition to needing developmental education, many of these students must solve financial problems, overcome handicaps and bad home situations, function with failure identities and lack of occupational awareness, and cope with numerous other social problems. Is it any wonder that high-risk students have such a poor completion rate? They represent a large portion of those who do not complete post secondary programs.

There have been many attempts to deal with the problems of high-risk students, most commonly by offering remedial academic programs. However, most of these programs have not shown great success in their attempts to reduce dropout rates, and few students even complete the remedial courses (Roueche, 1978). Some of the reasons cited for failure of most remedial programs are: lack of understanding by teachers, counselors, and administrators of high-risk student motivational problems; and the practice of most community colleges of enrolling high-risk students in remediation programs and regular curriculum classes simultaneously (Roueche, 1978). High-risk students are the least capable of handling additional remedial work and are often doomed to failure as a result of increased class loads. Slowing a high-risk student's matriculation through a program (lengthening the time needed to complete the program after program entrance) is asking the student least capable of staying motivated and least financially stable to endure longer! These facts further contribute to the dropout problem. In addition, high-risk students are often trying to deal with marital problems, extended unemployment, unclear career goals, and countless other problems while trying to succeed in school. Is it any wonder the bandaid approach of addressing academic deficiency has not worked?

High-risk students usually have more than an academic problem when they come through the doors of post secondary educational institutions. This fact suggests that educators must be able to understand the entire life situation of the student if help is to be provided. The educators must help high-risk students deal with motivational and social problems, help them develop realistic, worthwhile career directions, and simultaneously treat academic deficiencies.

Departments responsible for remedial services are usually required to deal with such a broad range of academic problems and student abilities that their understanding of the needs of the high-risk student and the academic demands of his target vocational program are limited. Such unavoidable circumstances limit the effectiveness of remedial services.

Too often developmental centers, learning centers, and remedial programs are given the task of trying to be all things to all students; and counselors are relegated to the jobs of intake, scheduling, and placement while working with unrealistically high numbers of students. This broad, undefined attempt at remediation may also contribute to the problem.

MVTC suffers from the same problem as the nation in dealing with high-risk students. In all programs, prior to this research (78-79 & 79-80), the dropout rate was 80 percent (Appendix A). The developmental learning center approach was used at MVTC. At least some of MVTC's high dropout rate and the nationwide dropout rate can be attributed to the above problems.

HISTORY

In 1976-77 the MVTC administration encouraged the General and Related Education Department to look into solutions to the dropout problem. The first two years were spent looking closely at the problem at MVTC. Specifically, statistical data was gathered on existing MVTC programs; an extensive library research project was conducted; and letters, stating the problem and asking for innovative methods of treatment, were sent to two similar post secondary schools in each state in the Union (see Appendix B for sample letter and some responses).

Our two years of research revealed that students who scored below the mean on our program pretest* spent fewer quarters in school and had lower GPAs than students who scored above the mean on the pretests (see Appendix C). The research data also revealed that some of our pretests did not correlate with GPA or course completion in some programs while in other programs a positive correlation was noted. This information verified that MVTC was having the same type problem with high-risk students as technical centers nationwide.

Library research, including an ERIC Search and a review of research collected by San Mateo County Educational Resource Center (SMERC-COSMOS), turned up very few innovative, successfully documented programs designed to meet the needs of high-risk students in a post secondary vocational setting. One exception was a project conducted by the University of Texas. The project, entitled "Impact of Administrative Climate, Instruction, and Counseling on Control Expectancy, Anxiety and Completion Rate of Post Secondary Educationally Disadvantaged and Minority Vocational Technical Students," was successful in documenting only a 5 percent dropout rate under appropriate combinations of the above factors: administrative climate, instruction, and counseling on control expectancy. The University of Texas project provided a basis for the design of our Prevocational Program. The remaining library search turned up little more than different forms of the campus learning center approach--one that was found to be used widely with only limited success.

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*The program pretest is an instrument standardized at Renton Vocational Technical Institute, Renton, Washington, and adopted and normed for use at Missoula Vocational Technical Center. The student who scores below the 70th percentile is distinguished as a high-risk prevocational student.

The survey of the other post secondary vocational technical schools nationwide showed that: 1) all schools that responded to our letter were experiencing high dropout rates and 2) most were trying to develop more successful means of dealing with the problem. In developing our Prevocational Program we used some of the ideas from these centers; however, none of the schools we contacted provided us with a prevocational program with documented success in eliminating the high dropout rate of high-risk students. Some schools had different names for their learning center efforts, but on closer examination, most consisted of remedial classes, tutoring, study skills courses, and referral counseling for those students having problems in their program's curriculum. None seemed to have validated, specific, well integrated programs. Two programs of particular interest were from Florida and Utah (see Appendix D). We incorporated some of the methods used by these centers into the design of our own Prevocational Program.

Using the above information and our own data, we began developing a model we felt might address MVTC's dropout problem. After formulating our ideas of what the Prevocational Program should be, we garnered the support of our administrators and started looking for funds to help develop the program and conduct the research.

One of our grant proposals was accepted by the Montana State Office of Public Instruction and we were awarded a three year research grant to test the value of our prevocational model.

The grant allowed us to begin implementing our Prevocational Program. This manuscript is one of the results of this three year project. At the time of this writing (June 1984) we are in the second to the last quarter of the third year of the project. The three "annual" reports have been gratifying, and the Office of Public

Instruction has encouraged us to write this manual prior to writing the final results in the fall of 1986. To date, the development of our Prevocational Program has covered a period of eight years. Five years were spent researching and promoting the concept; during the past three years, the research project has been in progress.

PHILOSOPHY

The five years of research we conducted on prevocational education, our ten years of combined experience tutoring MVTC students in the Learning Center (developmental studies program), and our local research, which helped us develop an understanding of the vocational programs taught at MVTC, have played a role in the development of our philosophy of prevocational education.

Our view is a pragmatic one. We are interested in using whatever methods work in trying to solve the dropout problems of high-risk students. We have employed many instructional methodologies in our attempts to deal with these students. This eclectic approach has also contributed to our philosophical view. Our view is one of eclectic pragmatism.

The lack of success of developmental programs and the library research we conducted have shaped our belief that if a Prevocational Program is to work, it must be target program specific. Consequently our prevocational program is designed to serve MVTC students interested in one of our vocational programs in a self-contained, well integrated program utilizing a specific course of study. Stating this belief in a negative manner it can be said that most programs not showing much success are using isolated intervention techniques, rather than an integrated, well-designed program (Snow & Lindquist, 1977).

One view of the well-designed, integrated program is that it is ecologically balanced within a social climate perspective (Moos, 1976). The Austin National Survey of Developmental Education Programs found evidence to support the social climate perspective in successful programs (Snow & Lindquist, 1977), which confirmed the statement by Moos that:

> Students feel more secure, interested, and satisfied in classrooms that emphasize involvement, affiliation and support. Classrooms in which students report a great deal of content learning combine an affective concern with students as people and emphasis on working hard for academic rewards, within a coherent organized context. Colleges stressing Personal Developmental dimensions, (e.g., humanism, breadth of interest, reflectiveness, broad intellectual emphasis, independent study and criticism) also tend to have more productive students. (Moos, 1976, p. 414)

It would appear, then, that if a program is to be effective in remediating the deficits of high-risk students, the learning environment should reflect the social climate perspective. This climate should support and encourage the individual by facilitating academic/personal success and thereby providing learning motivation. We will discuss academic success and motivation shortly, but first some comments on instructional methods in relationship to the above quote by Moos.

Some of our beliefs have been determined by the setting in which we teach. Post Secondary Vocational Education usually takes place in a relatively short period of time (two to seven quarters). The student is typically in class five to seven hours a day with the material being presented at a fairly rapid pace. The content is also very job specific, relating to entry level job skills and/or licensing examinations. At MVTC most programs are lock step--with specific beginning and ending quarters--time is a major factor in the learning process. In this method of programming, if a student cannot progress at the same

rate as the class material is presented, failure occurs and as much as an additional year of waiting for that course offering can occur. Preparing students for the job market, we believe, also puts us in a position where time is a factor. Unless the programs we serve use individualized instruction, our premise is that the high-risk students must be exposed to the "time factor" during the prevocational program in order to comprehend and internalize the demands of their chosen target vocational program. Therefore, individualized instruction is not our main instructional format. We do not believe that it can be in this educational setting.

Moos's quote also refers to "broad intellectual emphasis and breadth of interest" as factors producing productive students. Most vocational technical education by nature is specific and narrow in scope. We believe this requires us to deal with the high-risk student in the same limited manner (requiring specific knowledge, limited topics, and an occupationally limited scope) although we try to incorporate the remainder of Moos's concepts quoted above in our Prevocational Program.

Returning to our discussion of motivation and academic success, it appears that locus of control is important in facilitating high-risk student motivation.

Locus of control or internal-external locus of control refers to a person's expectations regarding his own ability to derive a payoff or success from his environment. If he perceives that he can control his own pay-offs he is considered to have an internal control expectancy. If he perceives that welfare, God, society, or other uncontrollable forces determine his behavior, he is said to have an external control expectancy (Mink, 1977). MacDonald (1970) states:

> Some time ago a social psychologist by the name of Fritz Heider spoke of the contingency relationship between can and try. A person doesn't try if he does not believe he can. One personality variable which appears to be especially relevant to this issue internal- external locus of control over their reinforcements are called 'internals.' That is, they consider the source of control over their fates to be at least partly within themselves. In other words, they believe that they can. Those that believe their lives are controlled by luck, chance, fate or powerful others, are labeled 'externals.' When it comes to doing something to control their reinforcements, they do not believe that they can.

MacDonald (1970) who has made an extensive review of control expectancy literature, has formulated several postulates regarding factors which may influence client efforts to or not to take advantage of rehabilitative opportunities. These are as follows:

1. Personal effort to overcome obstacles is characteristic of a high internal control orientation.
2. Success in trying to overcome obstacles causes shifts away from external to more internal locus of control.
3. Increased effort in learning is related to internal locus of control.
4. Initiative is related to internal locus of control.

We try to apply MacDonald's postulates in our prevocational program (see methods). It is our intent to shift the locus of control toward internality. We attempt this by starting our prevocational classes at a level most high-risk students can succeed at. We immediately reward this success and move on rapidly. We also strongly urge the students to study and inform them that the material will become more difficult.

Julian Rotter has placed the locus of control concept within the context of his social learning theory as control expectancy (Rotter, 1966). Mink, using this concept, has listed some of the implications for instructors wanting to implement this construct. We believe in and

try to incorporate this theory into our Prevocational Program. Mink (1978) summarizes his suggestions by stating:

> The challenge, then, of the social learning experience directed toward behavior change, is to help the learner focus on the relation between what he is doing and what he is getting out of it. The payoff must have value for the learner. The instructor must earn the learner's confidence in the instructor and the community college setting within which the learning behavior is to occur.

We use a group counseling format in our prevocational program. Mink (1976) implies the importance of group counseling in developing confidence in the learning situation. He paraphrases Carl Rogers in stating:

> Trust, friendship, and even love between individuals enhance their opportunities to achieve many humanistic goals. Rogers expresses this belief in working with encounter groups. He suggests that group counseling is safer and more effective than individual counseling in increasing learning and personal growth. And groups obviously offer a better chance for making friends, or finding the "helping relationships."

This counseling is aimed at increasing personal growth and creating "helping relationships"; these factors should result in increasing the students confidence in his learning abilities.

Rogers also talks about the importance of honesty in relationships with others (Rogers, 1961). Students in our Prevocational Program autonomously form study groups and select others in the group to work with on assignments. Trust, responsibility, and direction can be outgrowths of this effort.

Individual counseling and evaluative feedback also need to be provided for the high-risk student. We believe that the evaluative process must be done on an individual basis to avoid comparison of students in the group. Mink (1976) states the following concerns about teaching and counseling for work adjustment:

> Graded success would be possible only if the counselor and client had enough insight to enable the client to set

> realistic goals, that is, goals commensurate with client potential and skill. In turn, it would appear that the steps toward these goals should be concrete and clearly identified for the client in order to enable him to experience the payoff of his mastery when it occurs.

Individual counseling is the method we use to address the above concerns. Our entire program is geared toward this effort. Our locally normed pretests, identified program entry level skills, continued testing and post-tests and daily feedback provide the students with continual measures of their progress toward chosen entry level goals.

Mink discussed the use of Glasser's Model in relationship to Rotter's Social Learning Theory:

> In the Glasser model, Rotter's social learning model is essentially duplicated through obtaining a contract and a commitment to the contract to pursue new behaviors which will get a payoff which the individual does want, does value, and which will enhance his life. In fact, the unlearning and relearning of behavior is at the heart of the Reality Therapy process steps and ties almost one-to-one to the steps in Rotter's social learning model (Mink, 1976).

Ideas from Reality Therapy and Rotter's social learning model are utilized in the process of counseling for internality. We believe in confronting the high-risk student with non-congruent behavior (wanting to get through the course and not doing the assignments, for example). We ask this student to make a value judgement and confirm or redefine <u>for himself</u> the value of getting through the course or program. This continued feedback, if positive, increases internal locus of control; if negative, the problem is discussed with the student and the counselor continually works with the student until the student determines a new plan or approach--one that is more appropriate and realistic for the student.

Clients with high internal locus of control demonstrate improved job proficiency, as well as more highly developed personal qualities relating to employability and job success. The quick grasping of new

ideas, conscientiousness, moderation, and calmness all appear to be related to high internal scores. In addition, qualities like assumption of responsibility, need for achievement, and resultant satisfaction with training (invaluable work assets) are closely associated with an internal locus of control (Tseng, 1970). We try to increase the occurrence of the above behaviors by counseling for internality. Mink gives the following summary of this concept:

> Internality counseling sets out to help people and groups develop autonomy, spontaneity, and problem solving skills. These generalized, personal qualities are all conducive to gaining self-esteem, giving and getting love, having fun--in short, enjoying life. Specifically, people learn to solve their problems in a rational manner by understanding themselves better; and they learn to make choices that yield valued payoffs, fulfilling their basic psychological needs.

To view our application of counseling for internality, see the MVTC model in Chapter IV.

In summary, the philosophy of prevocational eduation at MVTC is based on the following principles:

1. We must deal with the whole person--many individual variables influence school performance.
2. Our instructors and counselors must provide an interwoven, comprehensive, well defined, and cohesive entry level program for each MVTC option.
3. We must provide the high-risk student with a realistic daily evaluation of his progress toward successful completion of his chosen target program.
4. The high-risk student must be made aware of acceptable levels of work and limited time constraints that are broken down into hourly tasks and relate to the speed and amount of work in the target vocational program.
5. We believe many high-risk students are unrealistic in their occupational goals and that many lack occupational awareness--we must help them become aware, and be able to help them search for viable alternatives when necessary (redirection).
6. We must promote criterion related instruction in all MVTC programs.
7. We must monitor changing entry level skills and recheck

pretest validities in relation to this change.

8. We must provide group counseling and individual counseling to meet the above stated needs.

9. We must continue to support those students not achieving their stated objectives and continually present them with options and directions in a realistic framework until they decide on a course of action.

NULL HYPOTHESIS *

(The Null Hypothesis assumes that treatment will not create a difference in performance between experimental and control groups.) Identifying high-risk students with a pretest and providing a six-week prevocational training program for them prior to their vocational target program entrance, will not increase the number of quarters high-risk students stay in school, and will not increase the GPA that these students obtain.

Those high-risk students entering the prevocational program will be compared to the high-risk students that are pretested and decide not to come to the Prevocational Program. The Null Hypothesis states that the prevocational students will have no better grades and will not stay in school any longer than the group not treated.

The high-risk prevocational students will not do any better gradewise, (GPA) and will not do any better in terms of quarters in attendance than a control group of high-risk students followed prior to the introduction of prevocational instruction at MVTC.

The completion percentage rate for MVTC students will not increase due to the six weeks of prevocational training provided for each group of students over the past three years. This group will be compared to

*Our Null Hypothesis was designed to test any measurable difference between prevocational high-risk students and high-risk students who do not participate in prevocational education. Adoption or rejection of a prevocational program depends on the results of the Null Hypothesis.

a two-year group of data collected prior to the implementation of prevocational instruction.

PROGRAM OBJECTIVES

The MVTC Prevocational Program will enable the high-risk post secondary vocational student to:

1. Compete successfully in the target vocational program of his choice at the time of program entrance.

2. Develop study skills and study habits prior to program entrance.

3. Assess his own attitudes, aptitudes, values, interests, and abilities in relationship to program readiness prior to target vocational program entrance.

4. Learn to cope with and/or solve social problems, associated with or interfering with post secondary vocational education, prior to program entrance.

   Problems such as:

   a) Living on a school budget
   b) Living on financial aid
   c) Dealing with institution related family problems
   d) Handling of transportation problems
   e) Finding time for study
   f) Finding part-time work
   g) Marital Problems

5. Change, lengthen, and/or re-evaluate his program choice prior to program entrance.

6. Choose from a wide variety of training and/or occupational options should the high-risk student decide to reconsider program choice.

7. Make better individual career choices by providing accurate information for personal self assessment and career awareness.

METHODS AND PROCEDURES

The Prevocational Program is offered six weeks prior to the beginning of the target vocational program entrance date. It serves high-risk post secondary vocational students entering the following target vocational programs at MVTC: Electronics Technology, Business Data

Processing, Forestry Technology, and health occupations programs (Licensed Practical Nursing, Respiratory Therapy, and Surgical Technology).*

The students are pretested at least 16 weeks prior to the scheduled target vocational program entrance. Some are tested as much as a full year ahead of time. Those students identified by pretesting as high-risk students are offered prevocational training prior to program entrance.

The Prevocational Program consists of 120 to 150 hours of instruction. The classes run four to five hours daily for a six-week period. The classes are self-contained and homogeneous in grouping according to the target vocational program the student is entering. For example, all nursing students make up one class, all forestry students make up a different class.

Entry level skills have been identified for each of the above programs. Instruction and course content differ in each program according to the entry level needs of each target vocational program concerned. For example, the nursing math requirements (entry level skills) differ from those in electronics. The instruction, then, is designed to bring the student up to entry level skills prior to target vocational program entrance. There are four classes that all prevocational students take: reading, math, study skills, and SACC (Self Assessment and Career Counseling).

The reading class consists of two main parts. One part consists of reading materials from the target vocational program and then taking

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*The programs listed are those included in the research design. During the three years of operation, the Prevocational Program has expanded to serve all MVTC programs.

comprehension tests. The other part concerns increasing reading speed and improving general reading comprehension.

The math class consists of a review of the basic skills for each target vocational program.* Beyond that, each program covers different topics. For example, nurses need to be able to use ratio and proportion and have some measurement skills upon entrance; electronics students need to understand the basics of algebra and trigonometry upon target vocational program entrance.

The study skills class consists of sections on listening, note taking, outlining, memory and learning, time management, and test-taking skills. Tests are administered at the end of each unit.

The fourth class, called SACC (Self Assessment and Career Counseling), is designed to provide individuals and groups with information to help make their own career decisions, and to help develop a social climate that develops trust in the program and student independence. Some of the topics covered during the SACC individual counseling component include: values, interests, aptitudes and abilities testing, and discussions. A weekly counseling session is conducted with each student during which his week's work in all subject areas is evaluated.

In some target vocational programs, additional entry level skills are needed. For example, forestry students are asked to write reports during their first quarter; therefore, we teach a basic written communications class to forestry students. These courses are discussed in more detail in Chapter II.

The purpose of group counseling is to develop rapport between the counselor and the students. Study groups develop as a result of

*The common basic review covers whole numbers, fractions, decimals, and percentages.

discussions in group counseling, and student support groups develop spontaneously. Group counseling is also valuable in that it provides situations where students can learn from each other; for example, one student may be having problems with a certain math section, and the other student may be having problems with some of the content area reading. The support group is developed by the students and they help each other in the learning process. Also, group counseling sessions are used to discuss academic and/or personal problems that affect academic progress during the Prevocational Program. Field trips to work sites to view people working in the target vocational occupation are included during group counseling sessions. We also set up group discussions between former students and prevocational students in a specific target vocational program. In addition, we provide group discussions between faculty members within a target vocational program and the prevocational students. One factor of the individual counseling and evaluation is the possible discussion of redirection. For example, when some vocational-technical students find out the true nature of computer programming or electronics, they decide that career choice is not for them. At this point, we try to successfully redirect them, help them find career fields in which they are interested and are personally suited for.

During the last week of the six-week prevocational session, the counselor and teaching staff conduct a final evaluation of each student. During the final individual counseling session, the prevocational student is given final evaluations in each of his classes in relation to the entry-level skills for the target vocational program. He is also given a recommendation from the prevocational faculty as to possible choices he might pursue; for example: enter a different

occupational field, continue with the present target vocational program plans, or seek employment. At this time, the student is asked to make a career decision (if he already hasn't) based on the extensive information gathered during the Prevocational Program.*

The lecture-test method of instruction is used. The speed of the Prevocational Program is determined by the speed of the target vocational program (we try to move at the same speed as the target vocational program in terms of amount of material covered); therefore, some of our prevocational programs move much faster than others.

Redirection is a possible outcome of our prevocational program. During weekly individual counseling sessions the student is advised of his progress or lack of progress. If the student is not keeping pace, his study methods are reviewed, additional study is encouraged, other options are suggested, or a longer remedial program is suggested to help him reach his goal (possibly six months to a year later).

*For a detailed review of our methods see MVTC model in Chapter IV.

CHAPTER II

MISSOULA VOCATIONAL TECHNICAL CENTER

PREVOCATIONAL PROGRAM ANNUAL PROGRESS REPORT

APRIL 26, 1984

PREVOCATIONAL PROGRAM ANNUAL PROGRESS REPORT

The Prevocational Program has been in operation for ten quarters at Missoula Vocational Technical Center. During the ten quarters 299 students were identified as needing prevocational education. This represents 59 percent (299 of 507) of the number of students entering the four program areas served (Health Services, Electronics Technology, Forestry, and Business Data Processing).

The research project is two quarters from completion. A great amount of data is being gathered to compare with data collected during a two-year period prior to implementation of the Prevocational Program.

The program is proving to be successful in helping many high-risk students. Success within the context of the Prevocational Program is defined as follows: (1) the high-risk student selects a more appropriate target vocational program that he successfully completes; (2) as a result of his participation in the Prevocational Program the high-risk student determines that employment is more appropriate than post secondary vocational education and secures appropriate employment; (3) the high-risk student successfully completes the target vocational program.

Of the 175 students who entered the Prevocational Program, 116, or 66 percent, have successfully finished the program.

As mentioned earlier in this manuscript, we are in the 10th quarter of a 12-quarter research project at the time of this writing. The final results of our research will not be complete until the students entering our summer 1984 classes have matriculated through their two-year programs. This means the final results will not be available until June of 1986.

The Montana State Office of Public Instruction, after reading our second year end report, asked us to write this "How To Manual" in 1984. This manuscript is the result.

We strongly believe the final report in 1986 will be more positive than the third year end report included on the next few pages.

Because of the low GPAs in the category of high-risk students who did not choose to take the Prevocational Program, we know that even more of the high-risk students in the category will not complete their target vocational programs. This will widen even further the present statistics that tell us that 75.4 percent of our successful high-risk students are still in school while only 45.2 percent of the high-risk students who did not take the Prevocational Program remain in school.

Table 1 on the following page summarizes the results of our first ten quarters of instruction.

TABLE I

PROGRAM Overall

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	299	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	175	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	57	2.77	43	75.4%	24.6%
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	18	2.15	11	61.1%	38.9%
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	40	1.66	13	32.5%	67.5%
4) COMPLETED PRE VOC (REDIRECTED)	33	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	8	———	———	———	———
6) PRE VOC DROPOUT (LOST)	12	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	7	2.17	1	14.3%	85.7%
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	124	1.73	56	45.2%	54.8%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	116	2.41	59	50.9%	49.1%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.
   1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.
   2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.
   3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).
   4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.
   5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.
   6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.
   7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

TABLE I SUMMARY

The preceding table shows the results of the Prevocational Program during the first ten quarters. The target vocational programs served during this time include Electronics Technology, Forestry Technology, Business Data Processing and the health occupations programs (Practical Nursing, Respiratory Therapy Technology, and Surgical Technology).

Of the 299 students who were pretested and needed the Prevocational Program, 175 attended. Of the 175 high-risk students attending, 57 successfully completed the Prevocational Program and entered the programs of their choice. Seventy-five percent of these students are still in school or graduated and are getting an average grade point of 2.77. Thirty-three of these students were successfully redirected and 11 of the 18 marginal prevocational students are still successfully completing their programs. These students, plus the 13 who succeeded or are succeeding in spite of us, add to the total of successes. This means that 60 percent of the prevocational high-risk students were successfully served. The 124 students who should have attended the Prevocational Program and did not, have a combined grade point average of 1.73 and only 45 percent remain in school or have graduated. It should be noted that only six classes are far enough into their programs to have completed said programs; therefore, these statistics are incomplete. A four point GPA scale is used at MVTC.

Of the students who completed the Prevocational Program unsuccessfully and entered the program at their own risk, 33 percent are still in school. The majority of this number have completed only one or two quarters or are currently in their first quarter and have a combined GPA of only 1.66, which is below minimum standards. Those in their first quarter cause an inflation of the 33 percent since there is no

GPA to be measured at this writing, and the 33 percent is based purely on number attending.

The table on the following page shows the results of our statistics when we do not use the Business Data Processing Program numbers in the totals. As you can see, the results are more favorable.

TABLE 2

PROGRAM Overall w/o Data Processing

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	207	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	120	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	41	2.83	34	82.9%	17.1%
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	16	2.12	10	62.5%	37.5%
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	29	1.80	12	41.4%	58.6%
4) COMPLETED PRE VOC (REDIRECTED)	21	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	4	———	———	———	———
6) PRE VOC DROPOUT (LOST)	5	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	4	1.91	0	0%	100%
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	87	1.81	43	49.4%	50.6%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	65	2.45	42	64.6%	35.6%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

TABLE II SUMMARY

The preceding table shows the results of the Prevocational Program during the first ten quarters, when Business Data Processing is not included in the totals.

Of the 207 students who were pretested and needed the Prevocational Program, 120 attended. Of the 120 high-risk students attending, 41 successfully completed and entered the target vocational program of their choice. Eighty-three percent of these students are still in school or have graduated and are getting a grade point average of 2.83. Twenty-one of these students were successfully redirected and 10 of the 16 marginal prevocational students are still successfully completing their programs. This means that 65 percent of the prevocational high-risk students were successfully served. The 87 students who should have attended the Prevocational Program and didn't, have a combined grade point average of 1.81 and only 49 percent remain in school.

Of the students who completed the Prevocational Program unsuccessfully and entered the program at their own risk, 41.4 percent are still in school. They have a combined GPA of 1.80 which is below minimum standards.

This demonstrates to us that our Prevocational Program is not working for the Business Data Processing students.* These findings suggest that our Prevocational Program for the target vocational Business Data Processing Program should possibly be terminated, or that we should reevaluate our Prevocational Program for these students and take a closer look at the Business Data Processing Program. This

*Following this narrative are summarized statistical pages for each program served. NOTE: Business Data Processing compared to the others.

decision should be made only after MVTC tries to determine the reasons for lack of success in this target vocational program.

TABLE 3

PROGRAM Trade and Industry

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	38	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	9	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	0	----	-	-----	-----
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	2	1.94	1	50%	50%
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	5	0.55	1	20%	80%
4) COMPLETED PRE VOC (REDIRECTED)	1	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	0	———	———	———	———
6) PRE VOC DROPOUT (LOST)	1	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	0	----	-	-----	-----
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	29	1.66	19	65.5%	34.5%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	11	2.64	10	90.9%	9.1%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

TABLE

PROGRAM Practical Nursing

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	66	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	46	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	16	3.15	13	81.3%	18.7%
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	0	———	--	-----	-----
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	10	2.01	5	50.0%	50.0%
4) COMPLETED PRE VOC (REDIRECTED)	12	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	2	———	———	———	———
6) PRE VOC DROPOUT (LOST)	5	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	1	0.00	0	0.0%	100%
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	20	1.67	6	30%	70%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	19	2.61	10	52.6%	47.4%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

TABLE 5

PROGRAM Data Processing

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	92	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	55	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	16	2.60	9	56.3%	43.7%
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	2	2.35	1	50%	50%
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	11	1.31	1	9.1%	90.9%
4) COMPLETED PRE VOC (REDIRECTED)	12	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	4	———	———	———	———
6) PRE VOC DROPOUT (LOST)	7	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	3	2.35	1	33.3%	66.7%
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	37	1.49	13	35.1%	64.9%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	51	2.36	17	33.3%	66.6%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

TABLE I

PROGRAM Respiratory Therapy Technology

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	36	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	23	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	9	2.15	7	77.8%	22.2%
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	5	2.01	3	60%	40%
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	3	2.20	1	33.3%	66.7%
4) COMPLETED PRE VOC (REDIRECTED)	3	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	1	———	———	———	———
6) PRE VOC DROPOUT (LOST)	0	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	2	2.68	0	0%	100%
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	13	2.02	7	53.8%	46.2%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	2	2.68	1	50%	50%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

TABLE 7

PROGRAM Forestry Technology

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	11	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	7	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	3	2.77	3	100%	0%
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	1	2.01	0	0%	100%
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	3	0.00	0	0%	100%
4) COMPLETED PRE VOC (REDIRECTED)	0	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	0	———	———	———	———
6) PRE VOC DROPOUT (LOST)	0	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	0	0.00	0	0%	0%
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	4	1.36	1	25%	75%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	6	2.23	4	66.7%	33.3%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

TABLE 8

PROGRAM Surgical Technology

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	17	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	10	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	6	2.91	4	66.7%	33.3%
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	3	2.63	2	66.7%	33.3%
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	0	----	-	-----	-----
4) COMPLETED PRE VOC (REDIRECTED)	0	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	1	———	———	———	———
6) PRE VOC DROPOUT (LOST)	0	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	0	----	-	----	----
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	7	2.33	3	42.9%	57.1%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	8	2.70	5	62.5%	37.5%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

TABLE 9

PROGRAM Industrial Electronics

	TOTAL NUMBER	MEAN G.P.A.	NO. OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS CURRENTLY ENROLLED IN SCHOOL OR GRADUATED	% OF STUDENTS WITHDRAWN FROM SCHOOL
A) STUDENTS NEEDING PRE VOC	36	———	———	———	———
B) STUDENTS ATTENDING PRE VOC	25	———	———	———	———
1) COMPLETED PRE VOC - ENTERED PROGRAM (YES)	8	2.49	7	87.5%	12.5%
2) COMPLETED PRE VOC - ENTERED PROGRAM (MARGINAL)	5	2.00	4	80.0%	20.0%
3) COMPLETED PRE VOC - ENTERED PROGRAM (NO)	8	2.44	5	62.5%	37.5%
4) COMPLETED PRE VOC (REDIRECTED)	3	———	———	———	———
5) PRE VOC DROPOUT (REDIRECTED)	0	———	———	———	———
6) PRE VOC DROPOUT (LOST)	0	———	———	———	———
7) PRE VOC DROPOUT (ENTERED PROGRAM)	1	0.00	0	0.00%	100.00%
C) STUDENTS NEEDING PRE VOC BUT DID NOT ATTEND	11	2.02	7	63.6%	36.4%
D) STUDENTS ENTERING REGULAR PROGRAM BUT UNTESTED	27	2.23	12	44.4%	55.6%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

While the results of the Prevocational Program on the target vocational Business Data Processing students have not been as successful as in other target vocational programs, when they are compared to Business Data Processing students who enter the Business Data Processing Program, not needing prevocational education prevocational students are no less successful than the non high-risk students who enter the Business Data Processing Program. (see the table on the following page). This is a possible indication that additional factors need to be considered regarding the lack of success in this program.

During the prevocational Summer Quarter of 1983, our Prevocational Program added Trade & Technology target vocational programs to our group served. These numbers are reflected in our totals (see Trade & Technology statistics).

These programs (Combination Welding, Small Engine Mechanic, Heavy Equipment Mechanic, and Heavy Equipment Operation) have different program requirement standards and entry levels; therefore, they will not be included in the final report which will be printed in the fall of 1986.

It should also be noted that MVTC has (for the Summer of 1984) expanded the Prevocational Program to include all programs within the institution.

As a final note, it now appears that our final statistics will show: (1) an increase in percentage of MVTC students completing programs, (2) an increase in the student-instructor ratio, (3) more high-risk student program completion, (4) pretests that correlate positively with student GPAs, and (5) correlations that provide a basis for the development of expectancy tables.

TABLE 10

DATA PROCESSING STUDENTS ENTERED NOT NEEDING PRE VOC

TOTAL NUMBER	REGULAR TECHNICAL CENTER CLASS GROUP GPA	NUMBER IN SCHOOL	PERCENT IN SCHOOL	PERCENT DROPPED OUT OF SCHOOL
63	2.65	31	49%	51%

KEY TO TABLES IN ANNUAL PROGRESS REPORT

A) Students Needing Prevocational Education -- Any student entering MVTC target vocational programs who scores below the identified minimum entry level on the MVTC pretest.

B) Students attending Prevocational Education--Those students who were identified in A) and actually started the Prevocational Program.

1) Completed Prevocational Program--Entered Program (yes)--Includes those students that completed the Prevocational Program successfully and entered their target vocational programs.

2) Completed Prevocational Education--Entered Program (marginal)--Includes those students that completed the Prevocational Program but whose motivation and academic progress did not clearly indicate chances of success or failure in the target vocational program.

3) Completed Prevocational Education--Entered Program (no)--Includes those students that completed the Prevocational Program but had too many weaknesses in relation to entry level skills to be successful in the target vocational program. They entered at their own risk (our results did not include their possible success).

4) Completed Prevocational Education (redirected)--Those students that completed the Prevocational Program and decided to change their decided occupational goals, and were successful in their redirection option.

5) Prevocational Dropout (redirected)--Those students that changed career goals before completion of the Prevocational Program and did not complete the Prevocational Program.

6) Prevocational Dropout (lost)--Those students that failed to complete the Prevocational Program and are not accounted for.

7) Prevocational Dropout (entered program)--Those students that failed to complete the Prevocational Program and decided to enter target vocational programs at their own risk.

C) Students Needing Prevocational Education But Did Not Attend--Includes all those students from A) that chose not to attend the Prevocational Program.

D) Students Entering Regular Program But Untested--Includes all those that started a target vocational program but for some reason failed to take the MVTC pretest.

Example: Started target vocational program three days late.

ACADEMIC PROGRESS OF PREVOCATIONAL STUDENTS

GRADE LEVEL EQUIVALENCIES

TABLE II

	PRETEST SCORES GROUP M	POST TEST SCORES GROUP M	IMPROVEMENT GROUP M
Nelson Denny	11.0	11.7	.7
TABE Math	10.1	11.4	1.3
TABE TOTAL	10.7	11.4	.7

Group Means on Pretest and Post Test Scores for six-week Prevocational Classes

In measuring the academic growth of the high-risk students we served, the following results were obtained. The group mean entrance level, grade equivalence T.A.B.E. scores were 10.7 overall (math, English, and reading) and 10.1 in math. The entrance levels (Group M) on the Nelson Denny Reading test were 11.0. The exit scores following the prevocational quarter were: TABE 11.4, Math TABE 11.4, Nelson Denny 11.7. The comparatively small growth in overall TABE scores (.7 school years) was at least partially accounted for by the fact that the overall scores of many students include a high math or reading score while the other score was low. This meant that because

the TABE only measured to a 12.9 grade level, improvement would only be measured in one of their academic subjects while their stronger subject area could not be measured because of the TABE limit of 12.9. This variable can be substantiated by the fact that when we looked at math scores alone, we saw a group M improvement of 1.3 academic years, and when we looked at just Nelson Denny Reading scores alone, we saw an improvement of .7 academic years. These grade equivalency improvements were achieved in a six (6) week prevocational class.

In addition to the number of students served, the following objectives have been met:

1. All prevocational courses have been taught ten times, refined, and further developed.

2. Data Collection forms have been created to provide needed information. The data has been recorded. (See Appendix F)

3. Testing instruments for career awareness, self esteem, and self acceptance have been partially developed and are being piloted. (See Appendix F)

4. Pretesting as far as three quarters in advance, has been achieved.

5. Correlations between MVTC pretest, the TABE, and Nelson Denny have been made. The data is limited and is continuously collected. Final Results will be published in the fall of 1986.

6. MVTC policy has been changed to reflect the prevocational program as is evidenced by our new 1983-84 institution catalog.

   a. Entrance procedures
   b. Admissions
   c. Class offerings
   d. Pretesting

7. All MVTC faculty have been made aware of the prevocational program and many are involved in developing the offerings and doing curriculum work for prevocational students in their areas.

8. A complete proposal to expand the prevocational classes will be offered to all programs beginning Summer Quarter of 1984.

CHAPTER III

IMPLEMENTING YOUR PREVOCATIONAL PROGRAM

WHY A PREVOCATIONAL EDUCATION PROGRAM

1) A large percentage of adult vocational-technical education students are not completing the programs they enter. They are experiencing failure. Before prevocational education was . Before prevocational education was introduced at MVTC, the failure rate was as high as 80 percent in some of the more difficult technical programs; in all other programs the failure rate was at least 35 percent. These rates are unacceptable!!

A Prevocational Program can reduce failure in a post secondary vocational-technical setting. Prevocational education provides the student with a self-assessment process coupled with an academic review in order to determine if the student can succeed in the target vocational program of his choice. Prevocational students succeed at a higher percentage rate than high-risk students who do not attend prevocational education. In addition, prevocational students are able to find a more appropriate career choice should their target vocational program be undesirable and they can do this before they fail in a target vocational program. Also the prevocational students waste less time and money in programs that they are not suited for and that they do not finish.

2) The faculty of the institution is helped by a prevocational program. The faculty will be serving a more homogeneous group of students. The Prevocational Program should help assure the faculty that the students in their courses are better able to handle the work in the target vocational program at the speed at which the material is presented. Secondly, the instructor should have more motivated

students because the students served are more self-directed, have more occupational knowledge, and are better academically prepared.

3) The institution also benefits from a Prevocational Program because the faculty/student ratio should increase due to academic retention of students; more students are staying in school (fewer drop out). This, in turn, usually helps funding (most institutions are funded on a Full Time Equivalency basis). Because of the motivated students, course completions should increase, thereby increasing the completion rate and creating greater enrollment through all quarters.

4) The taxpayers, employers, state, and nation should also benefit from a Prevocational Program. Prevocational education provides a better use of our manpower and helps the right people find the right jobs.* There may be less waste of taxpayers' money, training time, and students' money and training time, and educators' time on students not suited for target vocational programs. The nation could also have a better work force, because prevocational students are taught what to expect from an occupation and therefore might be happier in their work or choose work that is appropriate for them.

5) The most important reason to have a Prevocational Program is because of the concern for the high-risk prevocational student. This student has come to the post secondary vocational setting with the clustering effect in place; he has little if any chance of completing the program. Through prevocational education it is possible to help this student become a successful, contributing member of society. This

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*Bolles states that less than half of the United States population is working at jobs they like (Bolles 1979).

in itself is a worthwhile goal without considering the benefits to the institution, state, and nation.

6) In addition to helping the students, the institution, and the nation we have found that prevocational education may also help other service agencies of our government, such as the Veterans Administration, Job Training and Partnership Act (JTPA), Vocational Rehabilitation, and Industrial Accident. These agencies are now referring students who are interested in MVTC programs and requiring them to take prevocational education prior to program entrance. This helps assure the student and the funding agency of a realistic vocational choice. It also provides the student with the option of changing target vocational programs should another program become more viable in the student's opinion.

THE FIRST STEP/BEGINNING

The title of this section, First Step/Beginning is very important. We ran into many roadblocks (many reasons for not starting the program); however, the way to overcome these roadblocks is to begin!! One example of a roadblock is the fact that no pretesting has been done or the fact that the pretests have not been checked for validity and reliability and therefore you are not sure which students should be involved in the Prevocational Program. Another reason not to begin is the massive amount of time, effort, and money needed at the onset of the Prevocational Program to develop materials, determine entry levels, and develop course content. You will also undoubtedly discover resistance among some staff members and even administrators regarding

the value of such a program and, of course, there are the concerns of finding space for the program. It is our belief that however small the program, it should be started. All the problems and the huge amounts of work, coupled with the skepticism of some colleagues, make the challenge of starting a Prevocational Program seem insurmountable, at least we felt this way. To make the Prevocational Program work, you must first put most of the existing problems into focus; when you see the many roadblocks all at once it is disheartening--seemingly impossible! But you just begin, as with all difficult journeys, with the first step. Identify problems; develop or collect data on pretests and GPAs; survey target progams and/or students having trouble in the target vocational programs; talk about the Prevocational Program with everybody you meet. Don't get so wrapped up in the problems that you fail to start!

We found developing our program to be an ongoing, never ending process that we are continually learning more about, changing, and updating; but if we hadn't started the program, beginning with a small pilot project that the prevocational instructors decided to do on their own time, MVTC wouldn't presently have a Prevocational Program. Only by starting the program can you really demonstrate its merits to the students and faculty of your institution. Therefore, start!! Even if you are working with only one target vocational program and six students--start!

1) Assuming you have the time and money, the first step is to garner support for the Prevocational Program that you are developing. You should develop support both internally and externally. Naturally,

the administration must be in support of your program in order for you to get the time and space necessary to start it. The faculty who are involved in the target vocational programs you are trying to treat need to be turned into allies for prevocational education. You should convince them of what prevocational education is going to do for them. One of the strongest selling points is the fact that prevocational education can provide the instructor in the target vocational program with a more homogeneous group. It will be important for you to sell and resell this approach. Most educators do not understand the philosophy of prevocational education, and they will confuse it with isolated offerings or remedial courses and/or career counseling.

2) External support is also necessary. Without the support of such agencies as the Veterans Administration, Vocational Rehabilitation, JTPA programs, and other government agencies that channel students into your institution, your program cannot succeed. Most of your students will not be able to attend prevocational classes without the support of these agencies. As soon as you determine the course length, content, beginning and ending dates, you should write a brief abstract of the program and take it to these agencies and sell them on the idea of allowing their clients to enter these prevocational programs prior to program entrance. This has worked successfully at MVTC.

3) Pretesting is a necessity. The earlier the pretest can be given prior to target vocational program entrance, the better. If money is prohibiting you from starting a Prevocational Program immediately--one thing that can be done, if it hasn't in your

institution, is to run validity and reliability checks on your pretests, and to develop expectancy tables from this material to determine who is a high-risk student in each target vocational program or whether the pretest score even matters in the target vocational instructor's grading system! By gathering this data, you may find that some of your tests do not relate strongly to entry level skills. You can provide more face validity by doing item analysis and other treatments to these tests. The faculty in the target vocational program can be very helpful in developing pretests. In talking to instructors, determine which skill deficiencies seem to cause students the most trouble. Also, determine which courses seem to be the separators (the ones that cause students to drop out or to fail target vocational programs). By involving the faculty in this process, you also create interest and support for your Prevocational Program.

4) Determining the entry level skills of a vocational program is much easier said than done. One of the most important problems is that what appears to be real from the outside of the program may not be what happens internally. For example, an instructor calls for a student to buy a very complex $26 textbook. In reality, the student need not read the book to pass the course. If entry level reading skills are determined from this text, the information is unreliable and your statistics will substantiate this fact.

To get at the guts of what is really happening in a program, the students in the target vocational program, the teachers of the target vocational program, and the institution's counselors can all be helpful in determining the necessary entry level skills.

Students are capable of telling you what courses are the hardest for them and what courses are the easiest. They can tell you whether they have to read the textbooks or not. They can tell you how much of the material is presented through lecture, how much of the class is audio-visual materials, what kinds of tests are given, and how difficult these tests are. In addition, students can give you some kind of critique of the idiosyncrasies of some of the instructors in the target vocational program and therefore provide you with some insight into the instructor's personal classroom characteristics which may affect student grades.

Counselors are an excellent source of information on entry level skills. Primarily because many counselors spend much of their time seeing students who are having trouble in programs. These students give counselors a good insight into the difficult subjects of a program, which instructors may give students problems, what types of tests are used, whether these tests are normative or criterion based, or whether the test scores even matter in the instructor's grading system!

The instructors in the target vocational program are an additional source of information. Many will provide you with samples of their tests, tell you which textbook chapters are most critical, and which problem areas they must emphasize in their lectures in order for students to understand. Most instructors are very glad to tell you about the problems they have with certain subjects and certain students.

If you can find, or if you have access to, students who have already completed the program, they can provide excellent data. These

students, having completed the program, can look at the target vocational program in retrospect. They can give you information on such things as importance of the final exam, surprises toward the end of the quarter, and/or things they would have done differently if they were going through the program again.

Your efforts at successfully measuring entry level skills, need to be continually compared to GPAs and quarters of attendance. In addition, all student pretests should be compared to GPAs and quarters of attendance or other measures of progress in order to validate your pretests. After two or three years of collecting this type of data, the number of students analyzed is great enough to help assess the value of your pretests and create reliable expectancy tables.

5) Once entry level skills have been clarified and defined and pretests selected, developed, verified, or are being tested, it is time to develop materials and courses for the prevocational program. To better understand what is happening within the Prevocational Program while the students are with you, it is necessary to develop or select pre and post prevocational progress measures. These measures are also necessary in relating student achievement during the Prevocational Program to the attainment of entry level skills.

In developing materials and courses for the prevocational program it is important to establish where you want to begin in terms of content, and at what point you end; that being the point of minimal entry level skills needed for the target vocational program. We believe it's important to begin with material that most of your students can easily master. This provides successful experiences for your students at the

beginning of their prevocational effort. For example, in our math classes, as in all programs, we begin with a review of fractions and decimals. Following the two, four, or five day review of the use of fractions and decimals we gradually increase the amount and speed of presentation, ending in electronics by discussing the trigonometric functions, and in licensed practical nursing with converting from the apothecary system to the metric system.

In developing the reading class, we asked target vocational program instructors to provide us with 8-20 page articles representing both the reading difficulty and content of the materials our prevocational students would find in their target vocational program. For example, one of the articles contributed by the Licensed Practical Nursing Program was about the use of Striker Frames. We then developed a comprehension test on that material. Tests must be developed for each target vocational program. Passing grades on these tests should be determined by minimum entry level skills. For example, if the subject matter should be mastered by the student prior to the program entrance then a minumum of 90 percent on said test should be acceptable. In other areas where it is only necessary to be introduced to concepts, possibly lower percentages are acceptable. What are considered to be passing grades must relate closely to entry level skills.

6) Prior to serving your first prevocational high-risk student it's advisable to develop data collection forms. One form should be used for each individual student you serve, and one for each target vocational program served. The data from these forms will provide you with information concerning how well you are doing and in what areas

you are having problems. It's also advisable to collect more data than you think you'll need. Some of the relationships it will be helpful for you to know are: 1) How well do your prevocational students' grades compare with the grades those students earn later in their target vocational programs? 2) How do your pretest scores relate to target vocational program grade point averages? 3) How do pretest scores relate to prevocational class GPAs? 4) How do prevocational students' GPAs earned in their target vocational program compare with the GPAs of high-risk students in the prevocational target program who did not attend prevocational classes? There are numerous other relationships you may need to measure depending on your institutional situation. We found that even though we spent several months thinking about the data we wanted to collect, several additional measures were needed as the Prevocational Program developed. Therefore, we believe the natural tendency is to collect less data than you need--so collect more than you think you'll need in the beginning! As your project develops, you will decide more conclusively on which data is most useful and which additional data needs to be collected. We suggest that you begin with the best thought out data collection system possible, but don't be disappointed if you have to add variables.

It's important to collect both external and internal measures. Externally, we monitor the progress of the prevocational students after they exit prevocational education and are in the target vocational program by using grades from target vocational programs. Internally, we monitor student progress during provocational classes through internal pre and post tests. It's important later to develop

statistics determining how well entry level skills are being met. It is also important to keep records of all students entering a program, whether they were prevocational students or not. This information, when reviewed, will provide you with evidence concerning test validity, whether your expectancy tables are doing the job, and many other necessary pieces of information. It seems easier and more practical to collect some information that is not used, than to later find that there was information you wish you had collected and didn't (see Appendix F for sample collection forms used at MVTC).

7) We advise extreme caution in the selection of standardized tests used to determine the acquisition of entry level skills. We have found through trial and error that some standardized tests work for some of our programs while not for others. The use and selection of these tests is at best arbitrary when you begin your Prevocational Program. Obviously standardized tests are not normed in your institution; you must norm the tests for your purposes (that is, the predictability of adequate minimal entry level skills). Particular attention should be paid to the norming of these standardized tests. For example, it's not uncommon to find that a 12th grade reading level on one standardized test may be a 9th grade reading level on another standardized test. What is important for you is not whether it's a 9th or 12th grade reading level, but how it relates to the target vocational program entry level. Can you predict success with the test? Now (toward the end of the third year of our prevocational program), we are beginning to feel more comfortable with some of our standardized tests, but our data indicates that others will need to be revised or

discarded. At this point, we know of no shortcut for this process. No matter what standardized tests you select, you must relate their scores to performance in your target vocational programs; this can only be done through trial and error. Some of the standardized tests we selected that seemed to work well in other settings did not correlate very well at all in predicting success in MVTC's target vocational programs.* The positive side of this problem is that as time goes on, you will know more about your standardized tests in relation to your entry level skills.

8) Develop redirection links prior to serving your first student. Catalogs from most of the colleges, junior colleges, community colleges, and vocational technical center training programs in your area should be on hand for the students to examine. We use catalogs from most of the schools in the Northwest. In addition, possible placement on a job is very appropriate for some prevocational students and arrangements should be made with your institution's placement office. We also redirect students in our program to our Learning Center when it is deemed appropriate.

Our Learning Center is a self-paced remediation program. We send students who are interested in becoming a licensed practical nurse, electronic technician, etc., but do not have the entry level skills to assure success at the time of target vocational program entrance to the Learning Center. We set up a remediation program for these students and require them to check back with the prevocational counselor

*The results of the usefulness of standarized tests in our target vocational programs will be printed in the final report (Winter of 1986).

periodically for an assessment of their progress. They then take our post tests again prior to the next target vocational program entrance date. We can, again, at this time advise the students of their progress.

The redirection link is an important one because approximately 30 to 40 percent of our prevocational students decide that the target vocational program that they have chosen is not really what they wanted. The process of academic work, acquisition of knowledge relating to career information, plus the motivation necessary to complete the Prevocational Program help some prevocational students understand that their career direction is not appropriate for them. When this happens we provide the student with as many other appropriate career options as possible. A general knowledge of the programs at your institution and at other post secondary institutions in your state is essential in helping provide redirection alternatives to your students. The more you know about the programs in your institution and those nearby the better able you will be to provide competent guidance in the redirection process.

COMPONENTS IN RELATIONSHIP TO THE IMPORTANCE OF FLEXIBILITY

The components discussed below are important in that they allow you to build flexibility into your program at its beginning. This flexibility will allow you to do a better job and help more target vocational programs using less time. It should be understood and expected by anyone developing a Prevocational Program that manipulation of these components is a part of the process. Components should not be

expected to remain static during program development. The practice of throwing away what doesn't work and keeping what does, while always looking for better ways, is the attitude with which to approach the development of the prevocational program.

1) We believe that it is important for the prevocational program to move at approximately the same speed as the target program in terms of content, amount of material covered, and time taken. Once you have a picture of the entry level skills of the target vocational program you are trying to treat, it's essential that you design your Prevocational Program to contain about the same number of hours of homework and to cover approximately the same amount of material per class as the target vocational program the student might be entering. This will allow them to garner a more realistic view of the program they're planning to enter. What we are suggesting also implies that different prevocational programs aimed at different target vocational programs will move at different speeds. Our best planning efforts were not that accurate in assessing the impact of these variables. The first quarter we ran the prevocational program, the program lasted too long and moved too slowly. Over the quarters, by remaining flexible in our approach, we have determined that the ideal time for our prevocational quarter is six weeks. We feel that under these conditions the appropriate speed and amount of material can be delegated to each target vocational program. In summary, we feel that the speed at which prevocational programs move should be as close as possible to the speed at which the target vocational programs progress.

When we started the Prevocational Program, we moved too slowly. This did not allow the students to form a realistic perception of what was going to be expected of them in the target vocational program. During the ensuing quarters, we corrected this problem. We expect the time and content needed will vary from setting to setting, and from target vocational program to target vocational program.

2) Additional outside variables may influence the length and content of your prevocational program. The length of quarters or semesters coupled with the use of other program instructors' time placed some constraints on the length of our program. The prevocational program budget will undoubtedly be a variable. Access to target vocational program students needing prevocational education and pretesting dates may also influence your prevocational program. Many of our students come to MVTC from other communities; therefore, providing prevocational instruction immediately prior to target vocational program entrance is the most convenient time frame for our students (many need to move to Missoula). This time consideration also allows our students to hold jobs in their communities until six weeks before their target vocational program begins.

3) Our Self-Assessment and Career Counseling class (SACC) consists of both individual and group counseling. We found that this combination of individual and group counseling works best for us. In the group component, we talk about the development of plans and goals. We try to develop group cohesiveness. We discuss general academic problems and we provide for group discussion between target vocational program instructors and prevocational students and between post-target

vocational program students and prevocational students (see MVTC model for a more detailed explanation). Your counseling staff and methods of counseling used by your program may determine a different breakdown. One of the topics we discuss in individual counseling, that of redirection, involves a great deal of time. Some students will take seven, eight, or nine hours in a two or three week period while other students will take very little time, five to ten minutes per week. This flexibility needs to be built into the counselor's schedule, primarily after the second week when most redirection begins taking place.

Our reading course is broken down into two main areas. First, the reading lab involves speed reading and reading for the development of general comprehension; second, the reading class involves reading material suggested by target vocational program faculty, and development of vocabulary needed in the target vocational program . We have found this to be a happy mixture. However, in beginning a Prevocational Program, creating the reading lab part of the course (providing speed reading and general comprehension drill) is much easier to assemble and start than are the target vocational program area reading materials and vocabulary. Comprehension tests must be developed for each article obtained from the target vocational program instructors. Vocabulary lists must be found and tests must be developed for them. In addition, these lists must be verified as valid vocabulary lists by the target vocational program's instructors. All of this consumes a lot of time. The articles received must also be checked for reading difficulty. We must, in developing tests on the articles, include various types of questions such as: drawing

inferences, making conclusions, finding main points, and reading for facts. The process of developing six vocabulary lists of approximately a hundred words each for each target vocational program is very time consuming. In the first quarters of our Prevocational Program we found that we did not have developmental time available to create the tests and vocabularies that were content specific. So while developing these, in the early quarters of the research, we relied more on the reading lab time and less on articles and vocabulary. For example, in the first quarters of the reading program, one hour a week was devoted to giving out the article for the following week and the vocabulary list to be learned by the following week. A review of test scores from the comprehension and vocabulary tests from the previous week took an additional day. Three days of the week were used for reading lab and each student was required to spend an hour a day in the lab. As we developed more materials and became more proficient, we included lecture days on drawing conclusions, finding main points, and so forth. We have delegated the lab to more and more of a student responsibility outside of class time. In summary, allow enough flexibility in your Prevocational Program to allow for course development and change.

4) Some target vocational programs require additional or different classes than the four basic classes provided throughout our Prevocational Program. We teach reading, math, SACC, and study skills in each program. In the MVTC Forestry Technology Program, our students must be able to write paragraphs and short reports the first quarter they are in the program; without these skills their success is questionable. Therefore, the forestry students' Prevocational Program

consists of the above four courses plus a course in writing skills. Therefore, in developing your program, try to leave yourself enough flexibility so that you can include more courses for a particular target vocational program or drop courses from a target vocational programs if necessary.

5) The study skills course provides you with unique opportunities to be more versatile. Study skills as a course is more generic for us than any of our other courses. In the study skills course, we found it possible to combine several target vocational program student groups and thereby cut down on the number of staff hours needed. Study skills has also become somewhat flexible for us in content. For example, study reading (learning the SQ3R system), was originally taught in the study skills course. As our program has developed, we find that study reading fits better with the reading course than it does in study skills. We used it in study skills in the beginning primarily because of the above stated problems concerning the development of articles and vocabulary in the reading course that took so much time. Once the reading instructor had the articles and vocabulary content specific materials developed, the topic of study reading was changed from the study skills course and put into the reading course. This allowed us to spend more time on test taking skills in study skills than we had previously.

To summarize, study skills offers you the opportunity to teach combined target groups of students and also provides you with a chance to incorporate topics such as study reading into various courses.

6) We have found it is essential to keep our program integrated. However, in the first quarters of our research efforts, we would have prevocational groups meet in one classroom, their entire stay with us. We later found that it was beneficial for us to assign classrooms and to move students from classroom to classroom each hour, varying the instructor and varying the room. One reason we feel that this worked better for us was that our students felt more like the other students at MVTC.

CONCERNS IN IMPLEMENTING PREVOCATIONAL EDUCATION

1) Timing is a very important variable in the implementation of your program. You may find, for example, that time needed for your prevocational effort varies from program to program. One program may require six to ten weeks for a prevocational quarter, others may require four or five weeks. This is determined by setting your program in motion and then building in the flexibility to change the length to meet the needs of your particular instructional situation. In most of the programs at MVTC, a six-week prevocational quarter immediately precedes entrance into the target vocational program. (The prevocational effort immediately precedes the beginning of the target vocational program instruction.) This we believe is necessary in our institution because of the fact that most of our programs are "lock stepped." Students who fail a course, begin late, or do not complete courses must wait for as long as a full year for that course or sequence of courses to be offered again.

In two of our target vocational programs, however, a more flexible variety of class offerings exists. In these target vocational programs, it was initially attempted to provide prevocational training during the first quarter of attendance; in other words, not providing prevocational education prior to enrollment but at the time of enrollment. This was conceived of as two or three prevocational courses while the student would take one or two courses from the target vocational program area. After much discussion and many attempts to try to implement this program, it was discovered that the remaining two programs were also somewhat inflexible in their abilities to do this. However, we are still attempting to integrate the prevocational program into the first quarter of some target vocational program offerings. In short, the sequence of the time offering of your Prevocational Program will be determined by the target vocational program you are serving. Some may allow you the luxury of providing your prevocational students a longer period of time to absorb materials and will require few time restraints within the prevocational program while others will provide you with a "lock stepped", regimented program with little flexibility for various student learning rates. This we feel requires you to adjust your prevocational offerings accordingly.

2) A word about selecting staff for a Prevocational Program. Obviously, your Prevocational Program can be no better than the staff that delivers it. Some of the qualities we feel are necessary and desirable for your staff members to have are as follows: 1) a general understanding and knowledge of the target vocational programs within your institution and the familiarity with the instructors teaching

these target vocational programs is very desirable if not necessary. Our program began with three instructors all of whom have taught in the General and Related Education Department at MVTC and have been exposed to students from all departments in regular classroom settings and have been exposed to working with all faculty. 2) An ability to deal with other instructors in all target vocational programs is especially important. Its importance stems from the fact that the Prevocational Program needs other instructors to provide career awareness information, to provide materials to develop reading articles and to provide vocabulary lists. The prevocational instructor must also work closely with them in developing entry level skills. The ability to gain this cooperation from target program instructors is vital to the success of the prevocational effort. 3) It is also necessary that your prevocational staff are individuals with at least some counseling ability. Counseling, in the broad sense, is needed in areas such as career guidance, marriage counseling, and financial guidance. The program cannot work without a staff with counseling skills and evaluation, data collection, and test making knowledge. 4) Instructors delivering the prevocational program must be able to influence the efforts of most of the staff in your institution in order to make the Prevocational Program work. In addition, they must have the ability to develop their entire curriculum. 5) It's beneficial if they have a background in teaching remedial courses. 6) It is essential that they have a belief in the prevocational effort. 7) It is also essential that they're somewhat realistic in their attempts to assess student learning levels and to develop material that will insure meeting those demand levels.

This is a caution against using instructors who tend to be lax in getting the content of the course covered. 8) One additional caution: teachers who have trouble failing students or evaluating them objectively are not ideal instructors for a prevocational effort. Reality must play a role. Your instructors' dedication to the prevocational effort and their abilities concerning the above traits are paramount in the success or failure of your prevocational attempts.

3) The following is a list of some of the cooperative efforts that must be generated primarily by your prevocational staff: 1) The administrative staff must have a commitment to the prevocational program. There are times when you will need money, support convincing other instructors of the value of prevocational education, and time to re-evaluate certain parts of your program in order to up-date them after sections may not have worked as well as you had hoped. The administration must feel positive enough to try to influence other agencies and people within the district and community to support your prevocational effort. 2) Without the target vocational program faculty, the prevocational effort cannot succeed. It is essential that the faculty in the target vocational programs be your allies. They are the ones who help you most in determining entry level needs, appropriate vocabulary, content area reading materials, and help identify student problem areas and topics to be addressed prior to program entrance. They can become your greatest allies if the Prevocational Program works. They, in turn, become the best sales people for your program. 3) The admissions department is also important. You undoubtedly need their help in getting your prevocational program in your institution

catalog. Until you gain access to the catalog, your prevocational effort remains a peripheral program at best. Admissions will also be involved in determining times to start programs, in pretesting, and in sending letters to students who should participate in prevocational courses. 4) The learning center or developmental center that probably exists now within your institution is also valuable. It can be used as a resource in redirecting students and also in providing you with students. Also, some of the more elementary materials and audio-visual equipment may be shared with this department, cutting down the cost of implementing your programs. 5) Good working relationships with counselors are essential. You will work closely with your institution counselors in implementing your program. They can probably tell you more about the problem areas within each program and about characteristics of target vocational programs than anyone in your institution. They will also be involved in contacting students and seeing that they're referred to the Prevocational Program. 6) Counselors in high schools around the state are also valuable assets to your program. They can do the pretesting for your prevocational effort and also provide a source for future prevocational students. 7) Representatives from the Veterans Administration, Vocational Rehabilitation, Industrial Accident, and other agencies that provide students for your classes are essential for support. Once your program is in place and working, you can provide these people with a valuable service. In Missoula now, some of these programs require their clients to sucessfully complete the Prevocational Program before they will fund them through the targeted vocational program. It provides them a situation in which

they can verify student readiness. We also work with these agencies by suggesting alternatives for those students who do not seem to want to go on to the targeted vocational program.

To sum up what we have been saying, it is important that you sell the prevocational concept to everyone in your institution and gain their help in setting up the program. Without the support of the people in your institution, your job will be much, much harder. It is essential you pick prevocational staff instructors who can help gain support for the prevocational program.

4) Some target vocational programs are easier to start treating than others. To help insure your success, we suggest that you start your prevocational efforts by serving target vocational programs that meet the following criteria: 1) The target vocational program served first should be the one with the highest need; in other words, one that is suffering from a high dropout rate. 2) The target vocational programs served first should be those that have criterion related instruction. You will have to look closely at the contents of these programs to determine how criterion related the programs are. Many times your best bet is a program such as Licensed Practical Nursing that aims toward a licensing exam at the end of the program. (Sometimes these programs tend to be more criterion related in their instructional methods.) 3) You must also evaluate the instructors in each program. Some will be more willing to cooperate in helping you determine entry level needs and so forth than others. 4) In addition, it helps if you have lead time. Select a program that intakes students two to three months after your prevocational staff has been selected so

that you can develop materials and be ready when the students come. Allow lead time for pretesting as well. In order to get the students there for your Prevocational Program, it is important that you notify these students at least two months prior to beginning your Prevocational Program. 5) It would also be helpful if any of the instructors who will be working in the prevocational effort have tutored students from target vocational programs. 6) We also suggest that you do not start with more than two or three programs, unless you have sufficient staff for such an effort. In the next section, Pitfalls to Avoid, we will provide you with some information about target programs to avoid when starting your Prevocational Program.

PITFALLS TO AVOID

1) The Prevocational Program provides reality only when the student confronts his academic situation. It is imperative that the student sees the reality of his situation in relationship to his vocational target program, and that the student act on the information given him concerning educational progress. In the beginning of our Prevocational Program, we provided too much support for our students and thereby did not allow the students to develop an internal locus of control. Instead, we provided the students with a support group (our prevocational staff). We continually helped the students, not limiting the time and energy we put into the helping process.

In our enthusiasm to help these students and make our prevocational program work, we provided an unrealistic amount of support. Because of this support, the students did not develop a sense of inner responsibility toward their institution work and inadequate student

self-help groups were formed. These students continued to turn to us for help throughout their target vocational programs.

Only one out of eight of this group was successful in the first quarter of their target vocational program. We had failed to provide them with a realistic picture of their abilities and motivation in relationship to the target vocational program. They also had not had the opportunity to develop self-help study methods or supportive study groups.

Therefore, be cautious about providing too much assistance to your prevocational students. Your task is to provide them with meaningful instruction aimed at target vocational program entry level skills in a timed setting. You can not remain a support person forever--the students must be helped to develop the skills necessary to be responsible for their own academic success or be redirected into target vocational programs that better suit them.

2) In planning and implementing a prevocational program, build in developmental time and flexibility. Unless you have the necessary time to identify some entry level skills, do some pretesting, and develop meaningful materials, the results of your prevocational efforts cannot be assured. It is important to remain flexible as the Prevocational Program progresses so that you can incorporate what you learn about entry level skills into the program as it evolves. Modify the materials that you're teaching, and alter pretests as your research deems it necessary. Our program has undergone many changes in three years. The pretests have changed, our ideas and understanding of entry level skills have changed, and we have added and dropped various

materials in the curriculum. Our time frame has changed from a full-quarter program, to a six-week program. We've moved materials into different classes and significantly changed our presentation of instruction in some classes. We have also refined our counseling approaches. All this development takes time, but you can have a more successful prevocational program by treating just one or two target vocational programs at a time. This will allow you the necessary time and flexibility to develop your program, and then gradually add other programs as time permits. We started with five programs and three part-time instructor/counselors. We would have avoided many of the needed changes by starting with fewer target vocational programs.

3) Prevocational education must be sold and resold to the faculty, staff, and administration in your institution. In our Prevocational Program today, it is astonishing to us to find that some administrators, staff members, and faculty (after we've operated in the institution for three years) still do not understand the principles on which we operate. Some faculty have no idea of the scope and content of prevocational education, even though we are listed in the institution catalog, have gained administrative and counseling support, and have discussed the concept with the faculty in each department and with each individual faculty member. Your program can only work if it is supported from inside. To be supported from inside, you continually have to sell the program until it is ingrained in the fabric of your institution. In addition, we believe it is a good idea to make presentations to agency people concerning the Prevocational Program so that

they have a better understanding and are able to better utilize your program for their clients.

4) Develop extensive methods for collecting data on student progress. All of this material is available to the prevocational counselor on a daily basis. In counseling individually with the students we have a great deal of data at our fingertips. When a lack of progress occurred, the students seemed to freely discuss the problems causing the lack of progress; for example: marriage problems, working nights while going to school, etc. Again, with our zeal to try to make the program successful, there was a tendency for us to overlook problems or to doubt our data when the student had not reached entry level skills. Many times we were reluctant to tell the student we felt his chances for success in the program were not good. In retrospect, we can see that in doing that we made some counseling mistakes. Again, in looking at the data that we possessed and looking at what has happened to those students in their target programs, we would have been better off believing the data we had on our Academic Progress Sheets (see MVTC model). Unless the students had demonstrated by the end of the Prevocational Program that they had solved the problems causing their lack of performance, we should have advised them not to continue! But the hesitancy of our belief in the information and data collection process we had set up did not allow us to do this. After three years of running the Prevocational Program, we are more sure of our data collection process and of our counseling techniques. This is allowing us to draw more fine lines in prevocational counseling and to stand more firmly behind our judgment of what is beneficial or not beneficial for

the student. This is constructive because it allows the student to make his own education decisions based on the best possible information we can provide. But it is wise to try to avoid the pitfall that we fell into--that of glossing over some of the students' problems because we so desperately wanted them to make it through the target vocational programs.

The program works best when we follow our basic strategy of providing the student with the best realistic information concerning his present condition in the academic setting in relationship to his academic progress and related problems--whether that information is positive or negative. We try to teach our students responsibility by allowing them to make their own decisions concerning this academic information. Our experience is that we were more accurate than we believed we were. Our experience has caused us to become much more directive in our individual counseling because of the credibility of our data.

5) It is important to have some idea of the prevocational student's capacity to learn. We feel it is important to get a measure of the student's intelligence. Give the students in your Prevocational Program an intelligence test. While we understand and agree with the arguments concerning the ability of intelligence tests to measure intelligence and we understand the problems in the varied definitions of what intelligence is, we do concur with the research that points to a positive correlation between grade point averages and intelligence test scores. In other words, intelligence tests may not determine

intelligence; in fact, we may not even know what intelligence is. But intelligence tests are fairly accurate predictors of success in school.

We did not use intelligence tests in the first year and a half of our Prevocational Program. During that time, we had three students that we called "gamers." These students defied our research design--they were not productive in the Prevocational Program; they did not exhibit study skills; they did not show motivation by attending classes and labs regularly; their grades with us were poor. In short, we viewed these students as poor academic risks, and we advised them that their chances of success in the target vocational program of their choice were limited. All three of these students went on into the target vocational program and were very successful. This was exactly opposite of the predictive information we provided these students. The reason these students succeeded contrary to our statistical information was because of their high intelligence. These students did not perform well on their pretests and did not care about prevocational education. They did not see it as meaningful to their success. However, when they began classes in their target vocational programs, their high intelligence allowed them to complete successfully despite poor motivation, while most students with poor motivation and poorly developed study skills would not have succeeded. Now in our program--by giving a short form of the Otis-Lennon Intelligence Test--we believe we get a rough estimate of intelligence scores that allows us to identify these "gamers" and better serve them.

6) Another caution concerning your first prevocational classes--remember, it is entirely possible for an entire prevocational

class to be redirected. In other words, none of these students should matriculate into the target vocational programs of their choice. In the beginning, there was a tendency to do some subjective, internal class norming. In other words, we had a tendency to want to send a certain number of our prevocational students on to the target vocational program. Thereby, using norming to determine entry level qualifications instead of the criterion entry level skills that we knew should be used. Be aware--and do not be dismayed--if in at least a few of your prevocational groups you have no students who decide to or are capable of going on into the target vocational program. This should not be thought of in any sense as failure. It is entirely possible that all of a group would find that they are not suited for that particular target vocational program or that they are not academically suited for that target vocational program, or that they simply don't like the work involved in that target vocational program. All may go on; and none may go on. We had problems with this in the beginning and were reluctant to tell entire groups the reality of their individual situations when the information concerning target vocational program completion was negative.

Since there are only three of us working half time in the prevocational program at MVTC, in delegating responsibilities in some of our early prevocational classes (two of us are counselor/instructors), we sometimes ended up teaching an academic course and SACC (counseling) to the same group of students. We found this to be undesirable. We believe that the counselor for a particular prevocational group must not be one of the teachers. We see the roles as separate and

different. The counselor has the obligation to confront the student with his/her progress or lack of progress, talk about redirection, talk about doubts the student has concerning the target vocational program he is trying to enter, talk about other feasible options, and to discuss the many social problems that interfere with his progress in school. On the other hand, the instructor is primarily interested in providing the students with the basic academic skills necessary to enter the target vocational program and is interested in facilitating the students' learning of subject matter and little more.

We found that (as counselor and instructor of the same students) we were too forgiving of not having assignments done or we were too understanding when papers were not turned in on time--when we knew the student's personal problems it made us less effective as classroom teachers. The other students in the class would also misinterpret this somewhat "wishy-washy" attitude toward the material being presented in the classroom.

We also discovered that it was very difficult for our students to deal with our shifting roles. They would be in a math class with an instructor who was pleasant and very willing to give answers to any question asked in class; and the next hour the same person, in the counselor role, was unwilling to tell them what direction to take their lives, but rather just provided them with data concerning their present academic progress. Our changing roles were impossible for many of our prevocational students to deal with. Therefore, we advise you to use different counselors and teachers for any one particular group of

prevocational students--those who are instructing and those who are counseling should be different people.

7) The Prevocational Program should be based on instructional continuity. It is important that the instructors in the Prevocational Program stress a structural course content, present the material in a similar manner and at the same speed, and give exactly the same tests. This is necessary because you must develop internal standards. These internal standards tell you whether or not the student is meeting the criteria you've set for entry into the target vocational program. If one instructor presents material in a certain way that makes it easier or more difficult, or gives tests that are easier or more difficult, or if the grading system is easier or more difficult, your standardizing process will not be accurate. A "B" given by a math instructor in one course should be approximately equivalent to a "B" given by the math instructor in a different section of the same course. Without this continuity your counseling efforts cannot be successful.

We had an instructor who had not taught prevocational education previously teach with us for one quarter. Although this instructor was given the course outline, course objectives, course content, tests, and so forth, it became apparent later that the actual process within the class had been different and that therefore we as counselors were not aware of what the students had received in the form of instruction. Consequently, their test grades did not accurately measure their progress in the course. Under these conditions, our counseling could not be as accurate, and we would not be able to clearly understand the

relationship between their test scores and the required entry level scores which we had determined for the target vocational program.

It is very important, therefore, to maintain continuity of content and grading in a particular course regardless of who teaches the course--the fewer changes in instructional staff, the better the Prevocational Program. Each instructor must present a complicated learning process and become familiar with the material and the speed at which the Prevocational Program must progress in each individual program. This does not allow for much instructor variation in instruction. Remember, the more your materials are related to criterion-related targets, the better you have identified entry level skills, and the more consistent your methods of instruction, the better your product!

It is important that at the beginning of each prevocational session it is emphasized that the material you are presenting is required by the occupation the student has chosen. It is not demanded by you specifically as an individual. Through the content target vocational program materials presented and through your continued reminders, it is reinforced in the students' minds that the materials they are learning relate directly to the demands of the occupation or target vocational program they have chosen.

Another way we use to promote this idea (that it's the program's demands and not the individual instructor's) is by inviting past target vocational program students and target vocational program instructors to talk with the prevocational students about the occupation and about the target vocational program area courses. This way, in your

students' minds, the materials that you are presenting in your prevocational classes are related even more closely to the demands of target vocational program.

THE MISSOULA VOCATIONAL TECHNICAL CENTER

PREVOCATIONAL PROGRAM:

MODEL

The main purpose of this chapter is to present the reader with a model of a successful prevocational program. The model presented here is the result of a three-year developmental effort.

Included in this chapter are: course outlines, course objectives, day-by-day teaching schedules, a flow-chart demonstrating student matriculation through the MVTC Prevocational Program, the method used at MVTC to identify high-risk students, the procedure for enrolling high-risk students in the prevocational program, and a description of the final student evaluation and the exit interview procedures.

While examining the model, the reader should note that this model is designed specifically for the curriculum of the vocational programs at MVTC. Any prevocational efforts of other institutions need to include the development of similar but probably different content designed to serve the specific needs of that institution.

IDENTIFICATION AND ENROLLMENT OF PREVOCATIONAL STUDENTS

When a student is notified by MVTC Student Services that he has been accepted, pretesting is one of the requirements for completing the acceptance process.

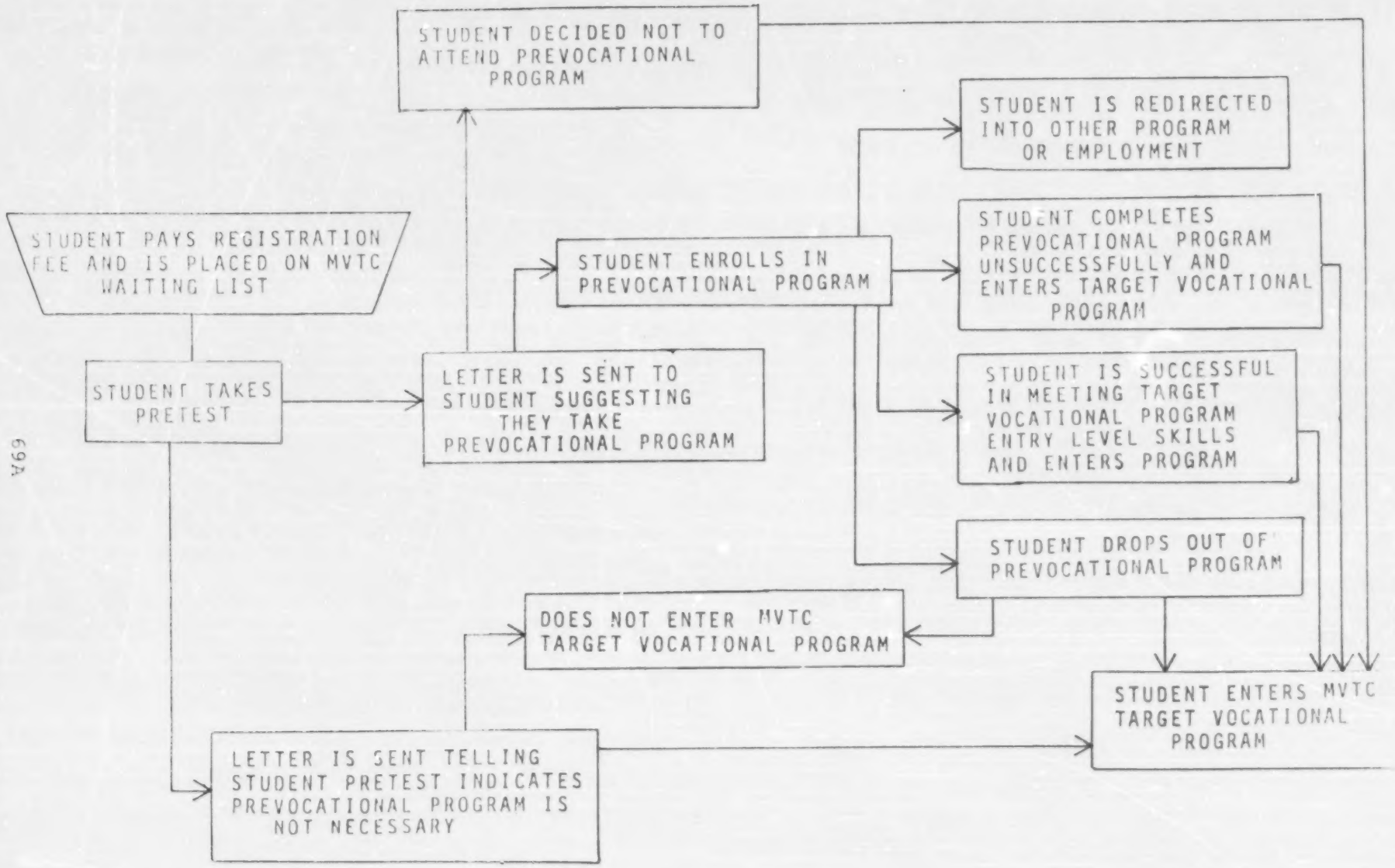
After the pretests are scored, the student is notified by letter that it is advisable for him to attend the Prevocational Program (see Appendix G for a sample letter and pretest).

Once the student is notified (by letter) of the Prevocational Program, it becomes his choice to attend or not to attend the Prevocational Program. Approximately six to eight weeks prior to the

Prevocational Program starting date, the high-risk students are again sent a letter inviting them to attend the Prevocational Program.

Approximately six and one-half weeks prior to the beginning of the students' target vocational program, the Prevocational Program begins. See the following flowchart for an illustration of the students' matriculation through the MVTC Prevocational Program.

In the next section, the curriculum and course content are outlined.


STUDENT DECIDED NOT TO ATTEND PREVOCATIONAL PROGRAM
STUDENT IS REDIRECTED INTO OTHER PROGRAM OR EMPLOYMENT
STUDENT PAYS REGISTRATION FEE AND IS PLACED ON MVTC WAITING LIST
STUDENT ENROLLS IN PREVOCATIONAL PROGRAM
STUDENT COMPLETES PREVOCATIONAL PROGRAM UNSUCCESSFULLY AND ENTERS TARGET VOCATIONAL PROGRAM
STUDENT TAKES PRETEST
LETTER IS SENT TO STUDENT SUGGESTING THEY TAKE PREVOCATIONAL PROGRAM
STUDENT IS SUCCESSFUL IN MEETING TARGET VOCATIONAL PROGRAM ENTRY LEVEL SKILLS AND ENTERS PROGRAM
STUDENT DROPS OUT OF PREVOCATIONAL PROGRAM
DOES NOT ENTER MVTC TARGET VOCATIONAL PROGRAM
STUDENT ENTERS MVTC TARGET VOCATIONAL PROGRAM
LETTER IS SENT TELLING STUDENT PRETEST INDICATES PREVOCATIONAL PROGRAM IS NOT NECESSARY

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INTEGRATION AND COHESION OF THE MVTC PREVOCATIONAL PROGRAM

In practice, the MVTC Prevocational Program Model functions as a cohesive, integrated entity. The courses relate to and reinforce each other. For example, the reading instructor can suggest that the student use information from the Principles of Memory Unit in the Study Skills course to improve his scores on the vocabulary tests he must take in the Prevocational Reading course; the Prevocational Math Instructor might suggest that one of his students apply one of the reading comprehension strategies he learned in Prevocational Reading to the problem of understanding mathematical word problems, etc.

Another result of the integrated design is that when analyzing student performance in the prevocational program, the integrated design helps to identify student strengths and weaknesses as related to chances of success or failure in the target vocational program. For example, maybe the student is weak in math but his successful performance in Prevocational Study Skills and Reading and his strong interest in math identified by the interest inventory administered in SACC indicate that in the long run he has the potential to succeed in the target vocational program.

The numerous experiences we have had with situations similar to those described above have led us to conclude that cohesion and integration are significant factors in a successful prevocational program. We do not believe that a fragmented or partial design or implementation can yield successful results for the high-risk student.

PREVOCATIONAL READING

INTRODUCTORY STATEMENT

Prevocational Reading is a course designed to develop and upgrade reading skills to a minimum level required for student success in a specific post secondary vocational program. It is developmental in nature and assumes that the student has no serious reading skill deficiency that is in need of remediation. Learning activities are related to the target vocational program's reading materials.

The main focus of the course is to help the student make a transition from general reading to the kind of specialized reading required in post secondary vocational education. It is meant to be "on the job training" to motivate the student to learn and apply reading skills to subject matter areas.

The course addresses: development of literal, inferential, and applied reading comprehension; development of a content area vocabulary (e.g., data processing students study data processing terminology); comprehension and retention of main ideas and significant details; development of efficient reading habits and increased reading speed; and development and application of study-reading techniques.

The course is conducted for one hour per day over a period of approximately six weeks for a total of 30 hours. The rate of presentation of the course content is determined by the time limitations of the vocational program that the student is being prepared to enter.

COURSE OBJECTIVES

In order to be considered a competent reader of vocational subject matter reading materials, the student must, upon completion of 30 hours of instruction, be able to:

1. Comprehend reading materials in the target vocational programs.

2. Have a twelfth grade general reading vocabulary as verified by a standardized reading achievement test.

3. Demonstrate competency in the following literal comprehension skills:
   A. Recognition and recall of main ideas.
   B. Recognition and recall of details.
   C. Recognition and recall of sequence.
   D. Recognition and recall of comparison.
   E. Recognition and recall of cause and effect relationships.
   (Recognition requires the student to locate or identify ideas or information explicitly stated in the reading selection itself. Recall requires the student to produce from memory ideas and information explicitly stated in the reading selection.)

4. Demonstrate competency in the following inferential comprehension skills:

A. Infer main ideas.

B. Infer supporting details.

C. Infer sequence.

D. Infer comparisons.

E. Infer cause and effect relationships.

(Inferential comprehension is the ability of the student to use the ideas and information explicitly stated in reading materials combined with his intuition and personal experience as a basis for formulating conjectures and hypotheses.)

5. Demonstrate the ability to reorganize ideas and information explicitly stated in vocational subject matter reading materials. (Reorganization requires the student to analyze, synthesize and/or reorganize the information stated in a reading selection.)

6. Demonstrate the ability to apply study-reading techniques to vocational subject matter reading materials.

Objectives 3, 4, 5, and 6 are measured by having students take a series of instructor constructed comprehension tests based on actual target vocational program subject matter reading materials; 80 percent accuracy on these tests is passing norming.

7. Demonstrate the mastery of content area vocabulary by passing (with a score of 80 percent or better) instructor made content area vocabulary tests.

8. Read at a minimum rate of 250 words per minute with 70 percent comprehension, at a minimum of two grade levels below the target vocational program's textbook reading levels.

In order to assess the student's ability to comprehend vocational subject matter reading materials, he should be assigned the task of reading and studying a reading selection (8-30 pages in length) that is representative of the type of reading materials encountered in the target vocational program he is being prepared to enter. In turn, the prevocational reading instructor should prepare and administer a comprehension test on the reading selection. A minimum of five vocational subject matter comprehension tests are used during our prevocational reading course.

Reading comprehension can further be improved by assigning the student comprehensiom improvement exercises. There are many published developmental reading programs that are designed for improving general reading comprehension; most of these work best when the student is assigned materials that are two levels below his/her reading level as identified by a standardized reading test.

COURSE OUTLINE

I. Pretesting.

A. Nelson-Denny Reading Test.
B. Tests of Adult Basic Education.

II. Course Introduction.

A. Reading as an active process.
B. The transition from general reading to study reading.
C. Comprehension.
    1. Literal.
    2. Inferential.
D. Efficient Reading.
    1. Fixations.
    2. Regressions.
    3. Subvocalization.

III. Reading Comprehension Practice.

A. With vocational subject matter material.
B. With general reading materials.

IV. Content Area Vocabulary Instruction.

V. Study Reading Techniques.

A. SQ3R
B. Main Point and Details
C. Study Outline.
D. Mapping.
E. Summarizing.
F. Note taking.
G. Marking and Underlining.
H. Inference.
    1. Drawing conclusions.
I. Analytical Reasoning.
    1. Problem solving characteristics of successful students.
    2. Problem solving characteristics of unsuccessful students.

VI. Post-testing.

A. Nelson-Denny Reading Test (alternate form).
B. Tests of Adult Basic Education (alternate form).

DAY BY DAY TEACHING SCHEDULE

DAY

1. A. Administer Nelson-Denny Reading Test.
   B. Hand out Reading Selection 1 and Vocabulary Booklet 1

2. Course Introduction.

   A. Reading as an active process
   B. The transition from general reading to study reading.
      1. Reading as a learning tool.
   C. Reading comprehension.
      1. Literal.
      2. Inferential.
      3. Applied.

3. Efficient Reading.

   A. Fixations, regressions, and subvocalization.
   B. Demonstrations of the E.D.L. Controlled Reader.

4. Students read on controlled readers.

5. A. Administer first target vocational program content area comprehension test.
      Administer first target vocational program content area vocabulary test.
   B. Hand-out Reading Selection 2 and Vocabulary Booklet 2.

6 & 7. Students read on controlled readers.

8. A. Return and review content area reading comprehension test.
   B. Lecture on main ideas and details and study outline.
   C. Assign practice assignment on identifying main ideas and details and creating a study outline.

9. Students read on controlled readers.

10. A. Administer second target vocational program content area reading comprehension test.
      Administer second target vocational program content area vocabulary test.
   B. Average comprehension and rate on controlled reading exercises from controlled reader progress sheets.
   C. Hand Out Reading Selection 3 and Vocabulary Booklet 3.

11 & 12. Students read on controlled readers.

13. A. Return and review content area reading and vocabulary tests.
    B. Lecture on Mapping.
    C. Make Mapping assignment.
    D. Collect study outline assigned on day 8.

14. Students read on controlled readers.

15. A. Administer third target vocational program content area comprehension test.
    Administer third target vocational program content area comprehension test.
    B. Average comprehension and rate from controlled reading exercises.
    C. Hand-out Reading Selection 4 and Vocabulary Booklet 4.

16 & 17. Students read on controlled readers.

18. A. Return and review content area reading and vocabulary tests.
    B. Lecture on Summarizing.
    C. Make summarizing assignment.
    D. Collect mapping assignment assigned on day 13.

19. Students read on controlled readers.

20. A. Administer fourth target vocational program content area reading comprehension test.
    Administer fourth target vocational program content area vocabulary test.
    B. Average comprehension and rate from controlled reading exercises.
    C. Hand Out Reading Selecton 5 and Vocabulary Booklet 5.

21 & 22. Students read on controlled readers.

23. A. Return and review content area reading and vocabulary tests.
    B. Lecture on Analytical Reasoning and assign practice exercises.
    C. Collect summarizing assignment assigned on day 18.

24. Students read on controlled readers.

25. A. Administer fifth target vocational program content area comprehension test.
    Administer fifth target vocational program content area vocabulary test.
    B. Average comprehension and rate from controlled reading exercises.
    C. collect Analytical Reasoning exercise assigned on day 23.

26. A. Post-test with alternate form of Nelson-Denny Reading Test.
B. Return content area reading and vocabulary tests.

NOTE: The above prevocational reading schedule is the one used during our three years of operation. As the development of target vocational programs' content area reading materials tests of comprehension and vocabulary comes closer to completion, the controlled reader section of the class is becoming more of a laboratory (student responsibility) and additional lectures on study reading techniques are being added.

TIPS FOR SUCCESSFUL IMPLEMENTATION

Before implementing the Prevocational Reading Course, the readability level of the target vocational subject matter reading materials should be established. Readability can be obtained by applying a readability formula to the majority of the instructional reading materials the student will encounter in the target vocational program he is being prepared to enter. One of the most reliable readability measures of post secondary reading materials is the Flesh Readability Formula. Once readability has been established, the prevocational reading instructor has a basis for comparing student progress in relation to the minimum reading level needed to ensure success in the target vocational program.

MINIMUM READING LEVELS FOR STUDENTS ENTERING
MISSOULA VOCATIONAL TECHNICAL CENTER PROGRAMS

PROGRAM	READING LEVEL
Accounting	14
Business Data Processing	14.2
Combination Welding	12.62
Electromechanical Technology	16.5
Food Service	9.58
Forestry Technology	14.61
General & Related Education	10.75
Heavy Equipment Maintenance	12.42
Heavy Equipment Operation	11.2
Mid-Management	14.66
Practical Nursing	16
Respiratory Therapy Technology	17
Secretarial	14.3
Small Engine Repair	12.0
Surgical Technology	16

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Santeusanio, Richard, P.. Developing Reading Skills for Business and Industry, Boston, MA 1981.

Smith, Brenda, D., Breaking Through Scott Foresman and Company, Glenview, IL 1983.

PREVOCATIONAL STUDY SKILLS

INTRODUCTORY STATEMENT

Study Skills is a 30-hour course designed to present the study skills needed by the student to be competitive in the post secondary classroom.

Study techniques are presented in class lectures. Homework assignments are designed to provide knowledge and to provide practice for newly learned study methods. A variety of tests are given to expose the prevocational student to many types of test taking situations.

COURSE OBJECTIVES

The student will:

1. Understand the necessity of learning study skills and how this can help increase chances of successful target vocational program completion.
2. Implement a time management plan, task organization plan, and identify proper study environments.
3. Demonstrate proper listening and note-taking activities in a classroom environment.
4. Demonstrate ability to apply principles of test taking by taking a mock exam.
5. Be able to locate people, places, and learning aids that can help in getting better grades.
6. With 80 percent accuracy on a locally normed test, verify a knowledge of human learning and memory principles.

COURSE OUTLINE

I. The Serious Student/Why Are You In School?

- A. Go to all classes.
- B. Assume responsibility for absences.
- C. Go to all tests.
- D. Schedule study time.
- E. Practice being a serious student.

II. Why Learn to Learn?

- A. Personal survey of learning skills.
- B. Reasons for learning to learn.
- C. Self concept as a learner.
- D. Personal Definition of success.
- E. Why come to school?

III. Principles of Human Memory and Learning.

- A. Memorize
- B. Short and lon' term memory.
- C. Over learning.
- D. Law of forgetting.
- E. Learning curves.
- F. Tips for better learning.

IV. Study Management.

- A. Study environments.
- B. Action/reaction.
- C. Study equipment and materials.
- D. Study needs evaluation.
- E. Study schedule worksheet.
- F. Study management.
    1. Learning cycle
        - a. Preview
        - b. Class time
        - c. Review
        - d. Study time
- G. Scheduling intensive study time.
- H. Task organization notes.

V. Listening and Notemaking.

- A. Listening skills and techniques.
- B. Cornell/responsive notemaking format.
- C. Reasons for notes.
- D. Suggestions for writing notes.
- E. Summarizing notes.

VI. Taking Exams.

A. Pros and cons of cramming.
B. Hints for better cramming.
C. Sample directions for tests and quizzes.
D. Identifying key words in true/false tests.
E. Answering multiple choice tests.
F. Reminders for taking objective tests.
G. Taking completion tests.
H. Taking essay tests.

VII. Campus Resources.

A. Checklist of possible problems.
B. Resources available.
    1. Learning Center.
    2. Career Information Center.
    3. Financial Aids Office.
    4. Academic Information Center/Student Advisors
    5. Counseling Center
    6. Campus Library/Local Library
    7. Student Bookstore/Local Bookstores
C. Additional resources needed to survive and succeed in school.

DAY BY DAY TEACHING SCHEDULE

DAY

1. A. TABE tests

2. B. The serious student.
   1. Introduction.
   2. Study skills checklist post secondary.
   3. Handout on effective classroom student.

3. A. Discuss "Effective Student" Handout.
   1. Hand out The Serious Post Secondary Student.

4. A. Quiz on the Serious Student.
   B. Show Unit I You Can Learn to Learn (YCLTL)

5. A. Quiz II on (YCLTL Unit I)
   B. Show YCLTL Unit 3, Part I, Study Management.

6. A. Lecture on study management.
   1. Lead discussion of study management.

7. A. Quiz III On Study Management.
   B. Begin lecture on Human Memory and Learning Principles.

8 & 9. Continue Memory and Learning lecture.

10. A. Quiz IV Memory & Learning.
    1. Handout "How to Build A Strong Memory".

11. A. Quiz V Building A Strong Memory.
    B. Begin lecture on listening & notetaking.
    1. Give examination Tape A.

12&13. A. Listening exercise tapes
    1. Handout Listening to people.

14. A. Quiz VI Listening to People.
    B. Quiz VII Examination Tape B.

15. A. YCLTL Unit 4 "Listening & Notetaking"

16. A. YCLTL Unit 4 Part 2 Listening and Notetaking.

17. A. Quiz VIII YCLTL Unit 4.
    B. Handouts
    1. Cornell
    2. Varieties
    3. Suggestions

18. A. Continue Discussions & Lecture on notetaking techniques.

19& 20. A. Library Assignment & Lecture.
1. Test on library usage--Quiz IX

21& 22. A. Test taking handouts and lecture.
B. YCLTL Unit 5 "Taking Exams".

23. A. Test on test taking skills--Quiz X.

24. A. Class "Your Emotions, Physical Needs and Academic Pressure and Success".

25. A. Concentrating to learn.
1. Internal & external distraction.
2. Fatigue (physical & mental).
3. Concentration techniques.

26. A. Quiz XI Concentration & Emotions, Physical Needs and Academic Pressure and Success.
1. Study Skills Final.

27. TABE tests

28. Conference Day

29& 30. Individual Conferences.

TIPS FOR IMPLEMENTATION

The many quizzes built into this course are designed to give prevocational students practice in test taking. When tests are handed back, discussion is encouraged as to why students missed questions. Some students are able to overcome test anxiety during this process.

Our study skills class is reinforced in all other prevocational classes. Our entire teaching staff (counseling included) has taught this course and students are reminded in all classes about using the techniques we are teaching. They get the same message many times.

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Christ and Adams. You Can Learn to Learn!. Prentice-Hall, Inc. 1979.

Pank, Walter. How to Study In College. Boston: Houghton Mifflin, 1984.

Ruygner, Alton. Basic Skill System. McGraw Hill, 1970.

Shepard, James F. College Study Skills. Houghton Mifflin, 1979.

PREVOCATIONAL MATHEMATICS

INTRODUCTORY STATEMENT

A Course designed to introduce, review, and/or develop fundamental mathematical concepts. The concepts required by the target vocational program options vary according to entry level requirements for each program.

The requirements for all our math classes are listed in the course objectives and course outline. The table on page 94 will identify by letter the content for each target vocational program. These letters relate to course content.

Prevocational math is a 30-hour course offered each day for 30 consecutive class days. The instructor lectures on the material, assigns homework relating to each section, and provides a test for objectives covered.

COURSE OBJECTIVES

The student will demonstrate his/her:

1. Ability to work addition, subtraction, multiplication, and division of fractions and decimals by successfully completing a test with a minimum of 95 percent accuracy.

2. Ability to compute percentage problems by successfully completing a percentage test (including word problems) with a minimum of 80 percent accuracy.

3. Knowledge of ratio and proportion by successfully completing a test covering ratio and proportion with a minimum of 80 percent accuracy.

4. Knowledge of simple algebraic equations and formations by successfully completing a test with a minimum of 75 percent accuracy.

5. Knowledge of the metric system and its conversions to other metric forms and the U. S. measurement forms by successfully completing a test with a minimum of 75 percent accuracy.

6. Ability to use geometry terminology and work basic formula problems by identifying with 90percent accuracy geometric terms used on a test and by prevocational mathematics.

7. Ability to identify trigonometry functions by completing a test with 70 percent accuracy.

8. Ability in problem solving skills by solving correctly the sequence, logic, problems, and puzzles tests with 85 percent accuracy.

COURSE OUTLINE

I. Fractional Numbers

- A. Addition of fractions with like denominators.
- B. Subtraction of fractions with like denominators.
- C. Use of prime factors and introduction to addition and subtraction of fractions with unlike denominators.
- D. Improper fractions and mixed usage and conversions.
- E. Multiplication of simple fractions.
  - 1. Multiplication of mixed numbers and improper fractions.
- F. Division of fractions.
  - 1. Division of fractions using mixed numbers and improper fractions.

II. Decimal Numbers

- A. Addition of decimal numbers.
  - 1. Addition of whole numbers and decimals.
- B. Subtraction of decimals
  - 1. Subtraction of whole numbers and decimals.
- C. Multiplication of decimals.
  - 1. Use of two and three decimal problems.
- D. Division of decimals.
  - 1. Two and three place decimal division problems.

III. Percent

- A. Introduction of terms.
- B. Conversion of fractions and decimals to percents.
- C. Use of percent terms (P = RXB)
  - 1. Rate
  - 2. Base
  - 3. Percentage
- D. Mixed percentage problems using all three variations of percentage formula.

IV. Ratio and Proportions

- A. Solving ratio problems.
- B. Solving proportion problems.

V. Simple Algebraic Equations

- A. Formulas of measurement and formula evaluation.
- B. Interchanging and solving for different variables within formulas.
- C. Solving for a single unknown.

D. Basic Notation and Terminology.
E. Squares and square roots.
F. Signed numbers, operations, order of operations.
G. Exponents, basic concepts and operations.
H. Operations with zero.
I. Scientific notation.
J. Roots and radicals, basic concepts and operations.
K. Multiplying and dividing Algebraic expressions.
L. Solving basic linear equations.

VI. Metrics

A. Basic units of measure.
B. Solving problems in metrics.
C. Conversions of U.S. Customary System to metric and vice versa.

VII. Geometry

A. Basic terminology.
B. Basic formulas for area, perimeter, and volume.
1. Circles, rectangles, triangles, squares.

VIII. Introduction to trigonometry functions

A. Identification of proper functions.

IX. Problem Solving skills

A. Sequences.
B. Logic.
C. Puzzles.

DAY BY DAY TEACHING SCHEDULE

Forestry Technology---F (I,II,III,IV,V,VI,VII,VIII)
Electronics----------E (Same as above)
Business Data Proc----DP (Same as above plus IX)
Practical Nursing-----LPN (I,II,III,IV,V)
Respiratory Therapy---RT (Same as LPN)
Surgical Technology---ST (Same as LPN)

The Roman numerals above correspond with the following key:

I Fractional Numbers
II Decimal Numbers
III Percent
IV Ratio and Proportions
V Simple Algebraic Equations
VI Metrics
VII Geometry
VIII Introduction to Trigonometry Functions
IX Problem Solving Skills

Keep in mind the above topics are covered at different speeds in each program.

TIPS FOR SUCCESSFUL IMPLEMENTATION

The math class is the easiest to control in terms of time. Therefore, in developing a prevocational program, math is the best course along with study skills with which you control the rate of speed of the prevocational program in relation to the speed of the target vocational program.

Remember that different topics have different levels of expectation. We demand mastery level skills in topics that must be mastered upon entry (90percent on tests) and lesser percents for those topics that do not require mastery. We have found that many students benefit greatly from this short course, especially if it's a review for them. So you should expect to see some students improve two, three, or even four grade levels between the pre and post tests.

SELF-ASSESSMENT AND CAREER COUNSELING

(SACC)

INTRODUCTORY STATEMENT

SACC is the guidance and counseling component of our Prevocational Program. For the student it is at least an hour a day and class runs for 30 class days. Because both individual and group counseling techniques are used, one prevocational class is a two hour per day responsibility for the counselor for 30 class days. The individual counseling sessions use most of this 60 hours (about 60 percent).

SACC provides individual and group counseling sessions to help the student deal with school-related problems and form realistic occupational goals. Attitudes, aptitudes, interests, values, motivation, goals planning, and alternatives to existing career goals are explored. Student achievement in prevocational courses is reviewed and discussed weekly to give the students a measure of their individual progress.

SACC is designed to help students build group rapport. It is also the counseling format used to provide reality therapy in relation to occupational choice. The counseling strategies used are: directiveness, honesty, and reality based. Students' unsuccessful academic behavior (missed assignments, failing tests, etc.) is discussed immediately with the student and alternatives are discussed. The students then choose whatever action or alternative they desire. Our job is to provide feedback to the students concerning their academic progress, motivation and career decisions in relationship to their entry level skills as related to the Prevocational Program.

COURSE OBJECTIVES

By the completion of this course the students will be able to:

1. Identify at least six job tasks in their target vocational program occupation that they will like and six that they will dislike.

2. Describe, by writing a paragraph, a typical work day in their target vocational program occupation.

3. List their strengths and weaknesses in relation to the target vocational program occupation.

4. Realistically assess their level of academic achievement in relation to the standards necessary to successfully complete the target vocational training program.

5. Better understand their interests, aptitudes, and values in relation to their target vocational program occupational choice and occupational standards by comparing their standard test scores and personal background with the Dictionary of Occupational Titles.

6. Identify, by verbalizing, a minimum of three attitudes necessary for successful program completion.
   A. Demonstrate these attitudes during the prevocational program.

7. Select, if necessary, an alternative educational program or occupation that is appropriate in reference to the objectives above (1, 2, 3, 4, 5, 6).

COURSE OUTLINE

I. Introduction

A. Confidentiality.

1. Purpose of course (don't drop out).
2. Review course content.
3. Stress not dropping out of prevocational program.

B. Ice Breaker.
1. Name game.
2. Shield.
3. Personal histories.

II. Self Measurement

A. Self assessment scale.
B. Occupational awareness inventory.
C. Interest inventory and interpretation.
D. Aptitude test and interpretation.
E. Values test and interpretation.
F. Intelligence test.
G. Achievement tests.

III. Planning and Forming Goals

A. Introduction to planning successful goals.
1. Short term and long term goals.

IV. Target Vocational Program Introduction

A. Target Vocational Program courses.
1. Give target vocational program course definitions. and give overview of course content.
2. List and discuss target vocational program courses and topics that cause most problems.
3. Through samples, examples, and mini classes; give students a small introduction to the kinds of instruction to expect.
4. Provide hands-on experience for equipment and tools used in target vocational program.

B. Occupational Information.
1. Where do your target vocational students get jobs?
a. In what businesses?
b. Geographic locations?
c. Starting salaries/benefits?
2. Future employment outlook.
a. Advancement in the target vocational occupation.
b. Future trends in target vocational occupation.
c. Additional career options.

3. What tasks are included in most jobs in the target vocational occupation?
4. Work conditions of target vocational programs.
    a. Hours, shifts, seasonal, etc.
    b. Work setting.
        1. Percentage indoors/outdoors.
        2. What is the work group like?
        3. Job relationships.
            a. Close supervision.
            b. Peers.
            c. Responsibility to others.
        4. Responsibility to tasks.
    c. Field Trips.
        1. Tour/demonstrations in classroom.
        2. Visit to one or two typical job sites of target vocational occupation.
        3. Invite former students now working to questions and answer session with prevocational students.
    d. Discuss job tasks liked and disliked.

V. Attitude

A. Attitude and success.
    1. Forming good attitudes.

VI. Academic Progress Review

A. Weekly measure and interpretation of student progress toward target vocational program's entry level skills.
B. Reward growth.
    1. Point out lack of growth.
C. Identify successful achievement levels for students.
    1. Discuss attendance.
    2. Work and study attitude discussion.

VII. Motivation

A. People with high and low levels of motivation.
B. Tips on maintaining high motivation.
    1. People who charge our batteries.
C. What motivates me to be in this prevocational program?
D. Decision making and motivation.
    1. Good personal decisions build motivation.

VIII. Commitment Time

A. Personal, academic, emotional, motivational strengths/ weaknesses.
B. Submit goal outline with strengths and weaknesses.
C. Decision time.

1. Importance of making decision.
2. Commitment to decision.

IX. Flex Time

A. Individual Counseling Sessions.
1. Discuss individual academic progress.
2. Provide feedback concerning target vocational program entry.
3. Help students with redirection planning.

DAY BY DAY COUNSELING SCHEDULE

DAY

1. A. Administer prevocational pretests (3 hours).
   1. Give overview of prevocational program.

2 & 3. A. Introduction (2 hours)
   1. Welcome students.
   2. Ice breakers.
      a. Name game.
      b. Shield.
   3. Write personal histories--homework.

4 & 5. A. Students complete self assessment scales, occupational awareness inventory (1 hour).
   B. Complete aptitude, values, interest tests (1 hour --Homework.

6, 7 & 8. A. Individual Counseling with each student--assess first week's work.
   B. Set up target vocational program instructors and target vocational program students group discussion sessions (6 hours).

9 & 10. A. Group counseling with students.
   1. Discuss goals and plans (2 hours).

11,12 & 13 A. Second week's individual counseling sessions.
   1. Discuss student progress.
   2. Interpret test results.
   3. Suggest redirection when appropriate (6 to 10 hours) (some students meet with counselor 2 or 3 times).

14 & 15. A. Film and discussion on motivation.
   1. Discuss people that motivate us.
   2. Motivation and target vocational program.
   3. Decision making and motivation.

16, 17, 18
19, 20. A. Third week's individual counseling with students.
   B. Discussion groups meet:
   1. With target vocational program instructors.
   2. With target vocational program current or former students.
   3. With post prevocational students. (10--18) hours.

21 & 22. A. Discussion of commitment.
   B. Film and discussion on motivation (2 hours).

23, 24, 25. A. Fourth week's individual counseling sessions. (6 hours to 12 hours).
1. Some students meet with counselor two or three times.

26 & 27. A. Group discussion of methods used to solve study problems.
B. Students turn in goal outline and strengths and weaknesses
C. Group discussion on commitment. (2 hours)

28. A. Counselor meets with all instructors to discuss progress & decide on a recommendation for each prevocational student. (4 to 8 hours)

29 & 30. A. Final individual counseling sessions.
1. Give target vocational program students results of final evaluation relating to target vocational entry level expectancy tables.

TIPS FOR SUCCESSFUL IMPLEMENTATION

We have a direct counseling approach. We use many features of Reality Therapy and enter into a contract with the students. We then appraise their progress toward meeting entry level skills (the contract). The counselor must become aware of the class assignments made by the instructors so he can better understand and discuss student progress.

We have found it best to introduce the idea of redirection to appropriate students early in the prevocational program (second week). This gives them more time to consider various career options. It also allows the student to more quickly focus on the re-evaluation of his target vocational program. This early introduction of possible redirection options seems either to provide additional motivation and conviction for the target vocational program or to cause serious self-assessment in relation to other career options. We believe that either choice made by the student is positive.

We have found that comparing students' personal written histories and test scores (interest, aptitude, values, abilities, and intelligence) can many times provide early, valuable signs as to the appropriateness of the vocational program. For example, a student's interests and values test scores show a high need for and interest in providing human services. This fact, coupled with a personal history that demonstrated positive rewards for the student from doing personal services for patients in a state mental hospital, shows possible warning redirection signs for this student who has selected Business Data Processing as a target vocational program.

It is helpful to the students to be told immediately when they are not meeting entry level expectations. This allows them to deal with the problem (apply more study, use different study methods, discuss problems with you that are interfering with study, and/or consider redirection).

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Roueche, John E. Let's Get Serious About the High Risk Student.

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SACC MATERIALS USED

TESTS

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Tests of Adult Basic Education, "TABE" CTB/McGraw-Hill, Del Monte Research Park, Monterey, CA 93940 1976

FINAL STUDENT EVALUATION
AND
EXIT INTERVIEW

After the prevocational courses have been completed, it is time to assess the effectiveness of the Prevocational Program on the high-risk student. This assessment involves two procedures: the Final Student Evaluation of each student by the prevocational staff and an Exit Interview involving only the prevocational counselor and the student. The purpose of these two final procedures is for the prevocational staff to arrive at an answer to the question: Has the high-risk student developed the skills needed to succeed in the target vocational program?

Final Student Evaluation

When all post-tests have been administered, scored, and the results recorded in each student's Individual Data Collection Form, the prevocational staff assembles for a conference for the purpose of evaluating the progress of each prevocational student. The focus of the evaluation is to determine whether or not the student is academically and psychologically ready to enter his chosen target vocational program. The professional opinion of <u>each</u> staff member is <u>crucial</u> if an accurate, reliable determination is to be made. (Keep in mind that some prevocational students may have been redirected by this time.)

We base our decisions on statistical data (various test scores), our experiences with and observations of the student in the classroom environment, and the counselor's knowledge of the student's strengths and weaknesses. This is done via informal (but serious) group discussion. If it is, or has already been, determined that the student will not be entering the target vocational program the staff works together to generate appropriate, viable alternatives for the student being discussed. (Remember, the student makes his own decision.)

The alternatives may range from employment to remediation to entry into a vocational program that is more appropriate for that student. The fact that an appropriate alternative has been identified for the student as a result of his participation in the prevocational program means that the prevocational program has done its job--the student's placement in an appropriate alternative is considered equally as successful as entry into the target vocational program. It is the unique combination of data that is both quantitative and qualitative in nature that makes the above described evaluation and determination process possible. As mentioned earlier, never doubt what your carefully collected data tells you.

As the Final Student Evaluation process is taking place, the prevocational counselor keeps track of the final decision and supporting reasons so that he can communicate this information to the student during the exit interview.

In addition, each prevocational instructor makes a brief written evaluation of the student's performance in his course and assigns a course grade of pass or not pass (whichever is appropriate).

The Exit Interview

The objective of the Exit Interview is to provide the student with a final evaluation of his progress resulting from participation in the prevocational program as related to the academic demands of the target vocational program. Only the student and the prevocational counselor are involved in the Exit Interview. The prevocational counselor begins the interview by showing the student his pre and post scores on the two standardized tests (the Tests of Adult Basic Education and the Nelson-Denny Reading Test). The counselor then interprets overall growth (excellent, good, marginal, poor). As the exit interview proceeds, the counselor relates and interprets the student's progress in each of the prevocational courses. Following this, he relates the results of the Final Student Evaluation done previously by the prevocational staff (the counselor includes the staff's final determination and the supporting reasons). The Exit Interview concludes with the student's acceptance or rejection of the Final Student Evaluation.

APPENDIX A

APPENDIX A

PERCENT OF STUDENTS GRADUATING FROM MVTC PROGRAMS

Four years are used in averaging the two years of graduates because some programs are two years in length.

School Year	Total Students Per Year	Graduates
1976-77	1103	210
1977-78	1030	221
1978-79	857	151
1979-80	796	149
TOTALS.	3786	731

19.3 percent Graduated

APPENDIX B

technical center

"For HIRE Education"

- *Post Secondary Vocational Technical Education*
- *Adult Continuing Education*
- *Community Service*

A Unit of the Missoula County High School District
Phone (406) 721-1330 909 South Avenue West Missoula, Montana 59801

March 13, 1979

Aims Community College
Greeley, CO 80631

Dear Educator:

Missoula Vocational Technical Center is developing a pre-vocational program to better serve the students entering the Center without the basic skills necessary for success in our programs. We are interested in reviewing any references you may have.

Specifically, we are interested in 1) any studies or data that show the degree of success of pre-vocational programs, 2) the pre-testing program, 3) the methods used in developing minimum entry levels for specific vocational courses (i.e. welding, computer programming, etc.), 4) the time necessary for students to complete the pre-vocational program, and 5) the degree of individualization in programs.

Of course, we will be glad to share any information about our prevocational plans that may be of interest to you.

Since we plan on implementing our pre-vocational program in September, 1979 information you can give us before then will be appreciated.

Sincerely yours,

Bruce E. Blattner, Chairman
General Education Department

ms

SAMPLE

OF

RETURN

LETTERS

LINN TECHNICAL COLLEGE
LINN, MISSOURI 65051
314-897-3603

November 30, 1978

Mr. Bruce E. Blattner, Chairman
General Education Department
Missoula Vocational Technical Center
909 South Avenue West
Missoula, Montana 59801

Dear Mr. Blattner:

Your letter of November 22 was reviewed with great interest by the administrative staff. We have been involved in many of the same issues you discussed, especially pre-enrollment testing.

I am afraid at this point we have very little to offer you that would be of any great help.

We do have remedial programs in the area of math and English. However, all such programs are concurrent with the technical offering and are not pre-vocational.

In Missouri, state law seems to preclude much realistic pre-enrollment testing since admission by law is open to anyone "out of school and sixteen years of age". We, of course, can council with prospective students regarding the area they chose to study.

We have done considerable research in the area of pre-vocational testing and will probably use the Temperament and Values Inventory published by Interpretive Scoring Systems of Minneapolis, Minnesota (4401 West 76th Street).

At the present time student job entry skill levels are monitored by a very strong industrial advisory board. In addition each department has its own minimum competency requirements to be met prior to graduation.

We would appreciate any information you develop or obtain regarding the proposed pre-vocational program.

I have enclosed a catalog and other material which may be of some value to you. Good luck in developing your program. If we can be of any future help please let us know.

Sincerely,

James P. Symmonds
Director, Special Services

JPS/ec

Enclosures

Anoka–Hennepin Independent School District No. 11

AREA VOCATIONAL TECHNICAL INSTITUTE

Box 191 • Anoka, Minnesota 55303
612 - 427 - 1880

December 1, 1978

Mr. Bruce Blattner
Missoula Tec Center
909 South Ave West
Missoula, Montana 59801

Dear Mr. Blattner:

Enclosed is a catalog of our AVTI programs and a short description of our Vocational Planning Program. The AVTI catalog includes the Vocational Planning Program on pages five and six.

The majority of the students who do attend the Vocational Planning Center do not have a high school diploma. We serve about 300 students a year and about 50% enroll in a long term program. The VPC also serves high school students with special needs on a half day bases. In general our school does not use a screening test but our program does use the Gates Reading and Math Survey.

I hope the enclosed information is of some help and we certainly would appreciate an outline of your program.

Sincerely,

Jim Drimel

Jim Drimel
Coordinator
Vocational Planning Center

jl

UMPQUA COMMUNITY COLLEGE

THE COMMUNITY COLLEGE OF DOUGLAS COUNTY

I. S. "BUD" HAKANSON
President

Post Office Box 967
Roseburg, Oregon 97470
Telephone 672-5571

November 29, 1978

Mr. Bruce E. Blattner, Chairman
General Education Department
Missoula Vocational Technical Center
909 South Avenue West
Missoula, MT 59801

Dear Mr. Blattner:

We do not have a pre-vocational program but do think we could use one as we have many of the same problems you refer to in your letter.

We are now looking at the general educational courses we require for an A.S. degree in the occupational programs. We are concerned about meeting the general needs of students and not just having a course someone thinks they need.

We have an open-door policy that says you may take a course if you can succeed. Obviously many drop because they do not have background preparation, or previous knowledge, to be successful in that particular course.

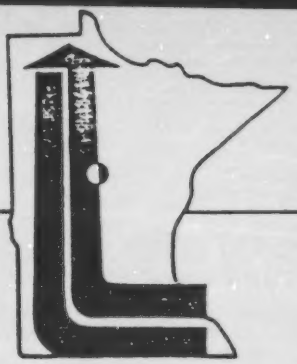
I would be very interested in your sequence of courses, curriculums you feed into and how you have come to establish your pre-vocational course. Would it be out of order to ask you to share your program developments.

Sincerely,

Robert M. Moldenhauer
Dean of Occupational Education

RMM/mrp

Staples Area Vocational Technical Institute
Staples, Minnesota 56479



Special Services Department

December 5, 1978

218/894-2430

Missoula Vocational
Technical Center
Missoula, Montana 59801

Dear Mr. Blattner,

I'll try to answer your letter of November 22, the best I can.

Our first experience with pre-vocational was last August for 4 weeks just prior to the beginning of classes. All students were enrolled in various courses in our AVTI, and instructors did have the students for a portion of the day. Otherwise most of the time was spent in orientations and basic skills work.

With this very brief background I'll try to answer your questions.

1) The only data we retrieved was from a student evaluation. Our session was objective oriented and the attainment of those objectives were met. The students rated all facets very high.

2) We tested both reading and math with the new Stanford Diagnostic tests--Brown level. We did not use them as a pre or post pattern, but rather as a starting point from which to work. We did not think we could remedy much in the 20 day period although there was progress made.

3) Our laws here do not permit pre-requisites for entry into vocational education. The only methods allowable are open-door or lottery. This is not to say that counseling does not take place-- it does, but only to the extent it benefits students and their choices.

4) As I stated earlier, a 4 week period was held. Upon entry into a course, however, both the instructor and student were aware of competencies and if continued help from the Special Needs department was needed, it was received. This did happen and so far no drops for academic reasons has occurred.

Staples Area Vocational Technical Institute
Staples, Minnesota 56479

Special Services Department

218/894-2430

5) Our program was totally individualized based on diagnostic-proscriptive work academically and counseling in other areas.

In my looking too at various programs, I see a variety of philosophies developing in pre-vocational work. I had hoped to cut ours to a two-week period with much emphasis on orientation, social growth, peer relationships and beginning help in academics, plus a review or up-dating gacet.

Other programs I know have an on-going pre-vocational program. That is, prior to entry some work is done, then a try-out and if successful fine, if not, a return to more pre-vocational.

I believe that school size and its facilities, and budgets have a lot to do with what can be offered.

If I may suggest another source, why don't you contact 916 AVTI, 3300 Century Avenue North, White Bear Lake, MN 55110? I recently saw their program and I believe this might be one that could be of greater assistance than I. I do appreciate your interest and concern for the pre-vocational concept and if I can help further please let me know.

Sincerely yours,

Donald Moe

Donald Moe, Coordinator
Special Needs Department

cds

GREATER JOHNSTOWN AREA VOCATIONAL TECHNICAL SCHOOL

JOHN [illegible]
Chief School Administrator
ROBERT H. KIFER
Administrative Director

445 SCHOOLHOUSE ROAD
JOHNSTOWN, PENNSYLVANIA 15904
TELEPHONE 814 · 266 · 6073

November 29, 1978

Bruce E. Blattner
909 South Avenue West
Missoula, Montana 59801

Dear Mr. Blattner,

In response to your letter concerning our vocational programs, I am enclosing brochures of the courses we offer on post-secondary level.

The only criteria we use for entering any of our programs, (exception, Data Processing, aptitude test given) is that a student is a high school graduate or has a General Equivalent Diploma.

All of our programs are 18 months duration, classes are held Monday through Friday from the hours of 3:30 p.m. until 9:30 p.m. Our school is used during the daytime by our 1,500 students in grades 10, 11, and 12.

I hope this information is of some help and if you have any specific question please feel free to contact me.

Sincerely,

G. Mislanovich

George Mislanovich
Counselor
Post-Secondary Education

GM:hlk
Enclosures:

Gila River Career Center

P. O. Box 337
SACATON, ARIZONA. 85247

562-3340 562-3349 836-2950 963-8090

January 18th, 1979

Bruce E. Blattner, Chairman
General Education Department
Missoula Vocational Technical Center
909 S. Avenue West
Missoula, Montana 59801

Dear Mr. Blattner:

At the present time the Pinal District is not using a pre-vocational program although one has been used at both the Gila River Career Center and the Arizona State Prison branches in the past.

The program used at the Prison was designed for both college level and vocational non-credit students and depended heavily on the test material from Valpor Corporation. They can be reached at 655 N. Alvernon, Suite 108, Tucson, Arizona 85716.

The Valpor equipment consists of a series of work simulations which are designed to test resistance to stress, ability to work in cramped quarters etc. Limited writing and reading skills are necessary. In addition to Valpor, tests for color perception, interest and academic preparation were used. These were the common paper and pencil tests.

At Gila River the program placed more emphasis on assisting the individual to make a choice based upon interest and only limited work simulation was used. Tests commonly administered were the Kuder Interest Inventory or the Wide Range Interest Opinion Test, the Stanford Test of Adult Basic Education and the Wide Range aptitude test, the Revised Beta Examination, Noonan-Spradley Diagnostic Program of Computational Skills and occasionally the Otis Quick Score. Dexterity testing using the Minnesota and the Crawford Small Parts Dexterity was conducted.

These tests were able to give the examiner an impression of the individuals academic preparation, academic ability and physical ability. As well as some categories of interest to begin discussion. Test results from this program were used by counselors in a general way as a guidance tool, they were never used to screen a person out of any program although on occasion a strong suggestion was made that an individual look more deeply into their interests.

One tool which was not used extensively because it was more time consuming was the Vocational Exploration Group or VEG as it is commonly referred to. I found this tool to be quite helpful although too time consuming for our setting.

I hope this information will be of assistance to you in the development of your program. Should you desire additional details, please feel free to contact me.

Sincerely,

Robert G. Stewart

Robert G. Stewart,
Employee Development &
Training Coordinator

RGS/rw

APPENDIX C

PROGRAM #15 - Data Processing

POPULATION 58	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	63.2	2.59	
AVERAGE FOR POPULATION ABOVE	75.25	3.22	3.73
AVERAGE FOR POPULATION BELOW	46.24	1.49	3.00

CORRELATION 1.79

PROGRAM #16 - Data Entry

POPULATION 25	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	72.8	2.8	
AVERAGE FOR POPULATION ABOVE	81.72	3.35	3
AVERAGE FOR POPULATION BELOW	59.5	2.01	2.8

CORRELATION .513

PROGRAM #20 - Combination Welding

POPULATION 35	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	67.8	2.6	
AVERAGE FOR POPULATION ABOVE	79.7	3.21	4.3
AVERAGE FOR POPULATION BELOW	53.58	1.8	2.89

CORRELATION .497

PROGRAM #27 - Marketing Management

POPULATION 53	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	70.71	2.33	
AVERAGE FOR POPULATION ABOVE	81.38	3.34	3.7
AVERAGE FOR POPULATION BELOW	58.76	1.11	3.28

125 CORRELATION .44

APPENDIX C

PROGRAM #30 - EDUCATIONAL ASSISTANT

POPULATION 15	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	71.29	2.53	
AVERAGE FOR POPULATION ABOVE	84.41	3.61	4
AVERAGE FOR POPULATION BELOW	59.8	.38	2.4

CORRELATION .758

PROGRAM #35 - INDUSTRIAL ELECTRONICS

POPULATION 19	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	66.82	2.95	
AVERAGE FOR POPULATION ABOVE	82.14	3.54	2
AVERAGE FOR POPULATION BELOW	53.02	2.41	2

CORRELATION .671

PROGRAM #40 - FOOD SERVICE

POPULATION 27	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	69.62	2.26	
AVERAGE FOR POPULATION ABOVE	82.17	3.01	3.1
AVERAGE FOR POPULATION BELOW	51.36	.49	3

CORRELATION .347

PROGRAM #45 - FORESTRY TECHNICIAN

POPULATION 61	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	75.65	1.99	
AVERAGE FOR POPULATION ABOVE	84.77	2.88	3.22
AVERAGE FOR POPULATION BELOW	64.17	1.19	3.14

126 CORRELATION .643

APPENDIX C

PROGRAM #53 - Practical Nursing

POPULATION 93	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	66.29	2.58	
AVERAGE FOR POPULATION ABOVE	78.28	3.29	3.9
AVERAGE FOR POPULATION BELOW	51.74	1.49	3.2

CORRELATION .515

PROGRAM #55 - HEAVY EQUIPMENT OPERATIONS

POPULATION 18	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	60.31	1.95	
AVERAGE FOR POPULATION ABOVE	73.21	2.52	3.86
AVERAGE FOR POPULATION BELOW	44.19	1.24	2.6

CORRELATION .642

PROGRAM # 60 - HEAVY EQUIPMENT MAINTENANCE

POPULATION 40	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	69.85	2.47	
AVERAGE FOR POPULATION ABOVE	82.84	3.17	3.95
AVERAGE FOR POPULATION BELOW	42.87	1.52	3

CORRELATION .685

PROGRAM #70 - SECRETARIAL

POPULATION 253	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	71.52	2.53	
AVERAGE FOR POPULATION ABOVE	81.61	3.29	3.1
AVERAGE FOR POPULATION BELOW	59.8	1.15	2.9

CORRELATION .322

PROGRAM #76 - MEDICAL SECRETARY

POPULATION 44	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	76.85	2.9	
AVERAGE FOR POPULATION ABOVE	85.63	3.52	4.2
AVERAGE FOR POPULATION BELOW	66.31	2.1	2.7

CORRELATION .404

PROGRAM #85 - RESPIRATORY THERAPY

POPULATION 2	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	71.4	2.26	
AVERAGE FOR POPULATION ABOVE	89.5	2.76	5
AVERAGE FOR POPULATION BELOW	53.3	1.75	2

CORRELATION 1

PROGRAM #90 - SMALL ENGINE REPAIR

POPULATION 25	PRETEST	GRADE POINT AVERAGE	QUARTERS ATTENDED
ARITHMETIC MEANS	66.9	2.1	
AVERAGE FOR POPULATION ABOVE	82.98	2.92	4
AVERAGE FOR POPULATION BELOW	49.47	.57	2.5

CORRELATION .132

APPENDIX D

UTAH TECHNICAL COLLEGE AT SALT LAKE
TELEPHONE (801) 969-3411 • 4600 SOUTH REDWOOD ROAD
SALT LAKE CITY, UTAH 84107
DALE S. COWGILL
PRESIDENT

6 December, 1978

Bruce E. Blattner, Chairman
General Education Department
Missoula Vocational Technical Center
909 South Avenue West
Missoula, Montana 59801

Dear Mr. Blattner,

We received your letter yesterday regarding our Pre-Technical program, and will attempt to answer the questions you asked. First of all, our Pre-Tech program consists of the following:

Basic Mathematics
Reading (including speed reading)
Communications or English
Zoom

(See attached sheets for explanation of course content.)

All of our classes are open entry-open exit. They are individualized to pick up students where they are and move them on from there. Students are given the following national standardized tests as both pre and post tests:

Mathematics: Wide Range Achievement Test
Reading: Gates-MacGinitie Reading Test
Communications: Stanford Achievement Test

We have also included copies of the placement and attitude survey tests used in math.

These tests are administered when the students enter and are used to help place them. Our students usually take one quarter to complete the Pre-Tech program.

In math and communications, we went to the departments on campus and talked with the instructors to find out what they felt the students needed to know in these areas as the entered their courses. We also analyzed the type of math and English classes required for each trade and designed our courses to prepare the student to take the appropriate related classes.

In reading, the instructor has done an analysis of the textbooks and other materials students are required to read in their trade areas to determine the grade level necessary to read and comprehend these textbooks and materials.

Statistically, the mean increase in student grade level in one quarter is 2.0 on the above tests. This is significant beyond the .01 level. The correlation between the pre and post tests is about .60.

We have developed a special math class for students who plan on entering the Practical Nursing program at the college. This math class has significantly increased the retention rate of first quarter nursing students in that department. We are expanding this service to other departments on campus.

The one thing that makes our Pre-Tech program successful is the staff we have. Each of our instructors is highly motivated and extremely concerned about students and their success. They do a lot of counseling with their students and establish good, meaningful relationships with them. They are willing to go the extra mile with each individual and help that individual be a success.

Another very important part of the program is the Zoom class. This class helps students learn the laws of success and how to use them. Students always comment on how much they enjoy the class and how it helps them.

We hope this answers your questions sufficiently. We would be glad to provide any further help we can.

Success to you in your program.

Sincerely,

Jerry Giles

Gerald L. Giles
Coordinator
Pre-Tech Department

LIVELY AREA
VOCATIONAL-TECHNICAL CENTER

500 N. APPLEYARD DR. TELEPHONE 576-3181 TALLAHASSEE, FL 32304

December 11, 1978

Mr. Bruce E. Blattner
Missoula Vocational-
Technical Center
909 South Avenue West
Missoula, Montana 59801

Dear Mr. Blattner:

Lively Area Vocational School, eight years ago, instituted the Individualized Manpower Program as a delivery system for teaching basic skills and training in pre-vocational education. This system is now used in over 80 vocational or vocationally related schools throughout the state of Florida. The system includes:

1. Making a career choice.
2. Learning the academic skills (reading, math and language) needed for career choice.
3. Learning the behavioral skills that can keep or advance in a job.

The system begins with a diagnostic battery (TABE Tests) followed by analysis of learning difficulties from which the individual student has prepared for him a study schedule designed to meet his deficiencies through individual instruction.

The IMT is used state wide and data of its success may be had by writing Jack Bragg - University of West Florida, 32504. The system is too complex to describe easily in a short communication. John Phillips at the University of West Florida coordinates this effort on the state level. A call to his office would get you much of the information you request. They have material prepared that they will share with you or request.

Sincerely,

Elizabeth Healy

Elizabeth Healy
IMT Department Chairman

EH/mr

APPENDIX E

MEMBERSHIP GROUND FOR LEARNING

GROUPS AND GROUP COUNSELING

1. Certain tenets of civility should be maintained. Name calling and abusive language are not permitted. Occasional slips may be disregarded or reprimanded, but persistent violations will result in expulsion. Physical abuse is strictly forbidden. Only one person should speak at a time. No one is allowed to carry on extraneous activities, such as side conversations or reading.
2. No forbidden topics. Topics need not be personal, but subjects such as sex, marriage, and religion may at times be beneficial to the group's progress.
3. The habit of playing psychologist--mind reading, mental archaeology, delving into the past--should be discouraged.
4. Discuss the concept of honesty as "making pertinent information available for problem-solving." Explain the notion of congruence. Get a commitment of honesty from each member.
5. Discuss the concept responsibility as making and keeping simple agreements. Again, get a commitment from each member.
6. No disciplinary action or retribution will be made from information revealed in the group. Exception: The group cannot

protect illegal activity. Make this point clear at the beginning.

7. Attendance is compulsory. Staff members and visitors (if any) are required to attend post-meeting critiques.
8. Members must participate. Such evasions as "I choose not to respond" to a question is unacceptable.
9. Defensive maneuvers are forbidden, such as changing the subject to avoid issue, filibustering, etc.
10. Arguments of opinion and fact should be distinguished when possible; if opinion, recognize it as so; if fact, try to determine it and settle the issue.

APPENDIX F

LPN CAREER AWARENESS SCALE

Directions: Check the appropriate answer for each question. Please check your first impression. Go as quickly as you can.

	OFTEN	SOMETIMES	SELDOM	HARDLY EVER
1. I have worked on jobs requiring swing shifts (rotating shifts).				
2. I have worked (at any job) in a hospital setting.				
3. I have been in the hospital or have had family members in the hospital.				
4. I have had to watch close friends and/or family members die.				
5. I have seen someone die.				
6. I need two days off from work a week in order to relax and feel better about myself and my work.				
7. My total monthly gross salary has been over $850.				
8. When I see serious accidents, my head spins and I have trouble thinking and acting clearly.				
9. When friends or family are mad at me, I have trouble sleeping.				
10. Sometimes in life threatening situations, I find it hard to function.				
11. When faced with a decision that I must make quickly, I tend to freeze-up.				
12. Even when everything goes wrong for days at a time, I can continue doing my job without losing sleep or getting very uptight.				
13. When my boss or supervisor reprimands me, I feel guilty and have trouble dealing with my feelings.				

NAME_____

	Never	Seldom	Occasionally	Often	Always
1. I have a pretty good understanding of myself.					
2. I have a firm grasp on what have been rewarding and nonrewarding experiences in my life.					
3. I know my capabilities and limitations.					
4. I plan ahead toward the kind of life I want to have 10-15 years from now.					
5. I believe my life after I am 50 will be good.					
6. I feel confident that I can combine career and family without hurting my family.					
7. I talk over with my family my plans about a career.					
8. I think I am capable of succeeding in a career.					
9. I am confident that once prepared I can find suitable employment.					
10. I believe that I will be able to study or learn new things.					
11. I believe that a career can be handled without undue stress on my mental and physical health.					
12. I have a clear picture of how to get the training or education necessary to pursue a career.					
13. I have a clear picture of the rewards I seek in a career.					
14. Personal growth is important to me.					
15. I see myself capable of succeeding in a career.					
16. I know how to work well with people.					
17. I narrow down my career possibilities to realistic choices.					
18. I see long range career commitment as possible for me.					
19. I know the steps to take in planning a career.					
20. I feel good about my life.					

SCORE_____

160

INDIVIDUAL DATA COLLECTION FORM (continued)

II. Reading

	COMP	SPEED	MCS
Wk # 1			60%
Wk # 2			70%
Wk # 3			80%
Wk # 4			90%
Wk # 5			90%
Wk # 6			90%

COMMENTS:

Comprehension (MCS)		Vocab. (MCS)	
1.	50%	1.	80%
2.	75%	2.	85%
3.	80%	3.	85%
4.	80%	4.	90%
5.	80%	5.	90%

III. Communications

Unit Title	Score	MCS
Pts. Speech		80%
Pts. Sent.		80%
Sub./Verb Agr.		85%
Para. Dev.		90%
Spell.		95%

COMMENTS:

IV. Study Skills

Unit Title	Score	MCS
St. Mgt.		70%
Ser. Stu.		75%
Mem. & Learn.		80%
Effect. Mem		80%
Listen.		95%
Notetaking		90%
Test Taking		85%

COMMENTS:

V. Counseling

A. Interests Tests - Scores

B. Aptitude Tests - Scores

C. Others

COMMENTS:

INDIVIDUAL DATA COLLECTION FORM

NAME _____ PROGRAM _____

STANDARDIZED TESTS

A. Skills Check Pretest
   1. Total _____
   2. Math _____
   3. Reading _____

B. Nelson-Denny

	Pre (G.L./SS)	Post (G.L./SS)
1. Reading Vocab.		
2. Reading Comp.		
3. Total		
4. Reading Rate		

C. TABE

	Pre (G.L./SS)	Post (G.L./SS)
1. Math - Total		
a. Comput.		
b. Concept and Prob.		
2. Reading - Total		
a. Vocab.		
b. Comp.		
3. Language - Total		
a. Mech. and Expr.		
b. Spell		
4. Total		

D. Occupational Awareness Assessment

IN-HOUSE TESTING

I. Math
   A. Pretest: _____

   B. Course Testing

AREA	SCORE	Minimum Competency Score (MCS)
1. WH. #		90%
2. Fractions		90%
3. Decimals		95%
4. Percents		85%
5. Ratio/Prop		80%
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		

   C. Post Test: _____

   D. Final Exam Grade _____

   E. Course Grade _____

COMMENTS:

SAMPLE "A"

GROUP DATA COLLECTION FORM

PROGRAM: _____ ENTRY DATE: _____ COMPLETION DATE: _____

STUDENT NAME	SOC. SEC #	Femin. Fin.	YES, NO, MARGINAL	MATH	READ	# CRTS IN PROGRAM 1 2 3 4 5 6	COMP. PREG.	QT. G.P.A. 1 2 3 4 5 6	FINAL GPA	REMARKS

SAMPLE

"B"

T42

165

166

MISSOULA VOCATIONAL TECHNICAL CENTER
PREVOCATIONAL STATISTICAL INFORMATION
FOR INDIVIDUAL STUDENTS

PROGRAM _____
NUMBER _____
DATES _____

(1) Name _____

(2) ID Number _____

(3) Birthdate _____

(4) Entry Date _____

(5) Sex _____ Male _____ Female

(6) Highest Educational Level Attained
___ Grades 1 through 11
___ High School Grad or G.E.D. Recipient
___ 1 Quarter to 3 Years of College
___ College Graduate

(7) Handicapped ___ Yes ___ No

(8) Minority _____ Yes ___ No

(9) Agency Assisted __ Yes ___ No

-10- Disadvantages:
Economic ___ Yes ___ No
Academic ___ Yes ___ No

(11) Permanent Address
_____ Montana _____ Missoula
_____ U.S.A.

SAMPLE "C"

FOLLOW-UP INFORMATION

[12] Number of Quarters Student Attended M.V.T.C.
___ Less than one ___ four
___ one ___ five
___ two ___ six
___ three ___ seven or more

[13] Student's Total G.P.A. _____

[14] Student's Total Computational G.P.A. _____
Total Basic Math G.P.A. _____

[15] Students Total English G.P.A. _____
Students Total Basic Communications G.P.A. _____

[16] Did student change programs
_____ Yes _____ No

17) Student's Total Percent Correct on Pre-Test _____

18) Student's Computational Sub-Test Percent Correct _____

19) Student's English Sub-Tests Percent Correct _____

20. Post MVTC Student Status
Working in _____ area
_____ related area
_____ outside area
_____ unemployed
_____ currently enrolled
_____ unknown

21 Completed Pre Voc Program
_____ Yes _____ No
a. Reason for not completing P.V. _____
_____
_____
b. Number of weeks completed _____

22 Completed Certificate Program
_____ Yes _____ No
a. If no, state reason _____
_____

Key for source of data:

○ Student Information Sheet

• Accountability Report Data

☐ Transcripts

— — Data filled in after Pre-Test scores are entered on questionnaire

( ) Pre-Test Scores

APPENDIX G

Missoula Vocational Technical Center
for HIRE education

- *Post Secondary Vocational Technical Education*
- *Adult Continuing Education*
- *Community Service*

Phone (406) 721-1330 909 South Avenue West Missoula, Montana 59801

Dear Student:

The results of your pretest indicate that your basic academic skills are low and that you could definitely benefit from attendance in the prevocational program. Enrollment in this program is not mandatory, however, results have shown that the program has benefited many individuals such as yourself.

The intent of the program is to provide a review of math, reading and study skills. These are the three areas which cause the most problems in vocational training. The program will provide you with skills and information regarding your particular training program and will assist you in your transition into formal training.

The prevocational program begins August 8, 1984 at 8:00 A.M. A class schedule for the various programs is attached to this letter. If you have further questions please contact me.

Sincerely,

George Martin

George Martin
Counselor

Enclosure
GM/dj

SAMPLE LETTER

HEALTH OCCUPATIONS
SKILLS CHECK

SAMPLE
PRE-TEST

REV: 4/84

Coursework in Health Occupations requires a student to have skills in math and English. This is a check on those skills. It is not a test. You cannot fail it. Try to answer all the questions. Time limit - two (2) hours.

IMPORTANT NOTE:

When marking your answer sheet be careful to blacken only the area beneath the letter of your choice. If you should decide to change an answer, be sure to erase the incorrect choice VERY cleanly.

REV. 11-83

PART I - PARTS OF SPEECH

A part of speech is listed in front of the following sentences. The number following the part of speech tells you how many times that part of speech appears in the sentence. Look at the five answers under the sentence and choose the letter which contains those words that represent that part of speech. Blacken the box on the answer sheet under the letter you have chosen.

EXAMPLE: Adjective (2) The accounting instructor wore a turtleneck sweater.

a. accounting, turtleneck
b. instructor, sweater
c. wore, turtleneck
d. accounting, sweater
e. None of the above

Answer Sheet - Blacken box under A. A B C D E

NOTE Be certain that the number on the answer sheet corresponds with the question number.

1 Noun (2) They conducted research and published their findings.

a. they, their
b. conducted, published
c. research, findings
d. conducted, findings
e. None of the above

2 Conjunction (1) Once a month he receives a cable or notice from his bank.

a. receives
b. a
c. or
d. from
e. None of the above

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3. Adjective (3) He told us to buy a fine-point pen with red or yellow ink.

a. He, us, pen
b. to, with, or
c. told, buy, ink
d. buy, red, ink
e. None of the above

4. Pronoun (3) He explained that we had thirty minutes to finish it.

a. explained, had, finish
b. He, we, it
c. that, had, to
d. He, had, to
e. None of the above

5. Adverb (2) The second-year students finished their bookkeeping assignment slowly and carefully.

a. second-year, carefully
b. slowly, carefully
c. second-year, bookkeeping
d. finished, slowly
e. None of the above

6. Verb (2) We believe English and math are necessary skills.

a. English, math
b. are, skills
c. believe, skills
d. believe, are
e. None of the above

7. Preposition (3) In the front of the classroom, Mrs. Speil lectured to the class.

a. In, front, of
b. The, the, the
c. of, the, to
d. In, of, to
e. None of the above

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8. Conjunction (3) She says I can neither type nor take shorthand, but I can lead discussion.

a. can, can, but
b. She, I, I
c. neither, nor, but
d. nor, but, can
e. None of the above

9. Adverb (2) Mr. Joyce usually arrives at nine, but he is already ten minutes late.

a. usually, already
b. arrives, late
c. at, is
d. nine, ten
e. None of the above

10. Adjective (1) Yesterday I used that electric typewriter.

a. used
b. that
c. electric
d. typewriter
e. None of the above

11. Noun (2) Several students have not finished the coursework.

a. have, finished
b. Several, coursework
c. have, not
d. students, coursework
e. None of the above

12. Preposition (2) During our lunch-break, we walked across the parking lot.

a. our, we
b. During, across
c. walked, parking
d. across, parking
e. None of the above

13. Verb (2) Mr. Burton graded our papers and gave them back to us.

a. graded, back
b. graded, gave
c. papers, gave
d. gave, back
e. None of the above

14. Pronoun (1) They could not take the test today.

a. they
b. take
c. test
d. today
e. None of the above

PART II - CAPITALIZATION

In the following sentences check the answers below each sentence and find the one with the proper capitalization and blacken the corresponding box on your answer sheet.

EXAMPLE the last time i saw sharon was the friday before easter.

a. The, Time, I, Sharon, Easter
b. The, I, Sharon, Friday, Easter
c. The, I, Sharon, Easter
d. The, I, Sharon, Friday
e. None of the above

Answer sheet Blacken box under B. A B C D E

NOTE START AT NO. 15 ON ANSWER SHEET.

15. the address the invoice was sent to was sears, roebuck and co., braxton building, midtown, wisconsin

a. The, Sears, Roebuck, Braxton, Midtown, Wisconsin
b. Sears, Roebuck, Co., Braxton, Building, Midtown, Wisconsin
c. The, Sears, Roebuck, Co., Braxton, Midtown, Wisconsin
d. The, Sears, Roebuck Co., Braxton, Building, Midtown, Wisconsin
e. None of the above

16. mr. cook, who lectures at kingston college, wrote two articles titled, "accurate typing" and "secretarial careers".

a. Mr., Cook, Kingston, College, Accurate, Secretarial
b. Mr., Cook, Kingston, College, Accurate, Typing, Secretarial Careers
c. Mr., Cook, Kingston, College
d. Mr., Cook, Accurate, Typing, Secretarial, Careers
e. None of the above

17. during world war II, stranton technical institute was built.

a. During, World, War, Stranton, Technical, Institute
b. During, World, Stranton, Technical, Institute
c. During, World, War, Stranton, Technical
d. During, Stranton, Technical, Institute
e. None of the above

18. we have exams scheduled for the first friday of december, but steve believes they will be canceled.

a. We, Exams, First, Friday, December, Steve
b. Exams, First, Friday, December, Steve
c. We, First, Friday, December, Steve
d. We, Friday, December, Steve
e. None of the above

19. the ibm selectric is used in all business classes except accounting 100.

a. The, IBM, Selectric, Business, Accounting
b. The, Ibm, Selectric, Business, Classes
c. The, IBM, Selectric, Business, Classes, Accounting
d. The, IBM, Business, Accounting
e. None of the above

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ART III - WORD USAGE

In each of the below parentheses are listed two words. Choose the word you would use in completing the sentences. On your answer sheet, blacken the space below the correct letter, either A or B.

EXAMPLE: (He, They) are on their way home from school.

a. He
b. They

Answer sheet - Blacken space under B. A B C D E

---

20. (Its, It's) now eleven o'clock and time for lunch.

a. Its
b. It's

21. I have typed the letter and (gone, went) home.

a. gone
b. went

22. The timed writes seem easy for (us, we) students.

a. us
b. we

23. The students have not (eaten, ate) their lunch.

a. eaten
b. ate

24. The class has (began, begun) on time.

a. began
b. begun

25. Rather (than, then) giving me the project, Mr. Tufts gave it to her.
a. than
b. then

26. The dog (which, who) is in front of the building, belongs to him.

a. which
b. who

27. She gave John and (I, me) the first two weeks to present our project.

a. I
b. me

28. (Who's, Whose) responsible for the next two weeks of cleanup?

a. Who's
b. Whose

29. If that calculator and typewriter (don't, doesn't) work, use the machines in the storeroom.

a. don't
b. doesn't

30. (Your, You're) the best typist in the class.

a. Your
b. You're

31. Soon after, (he, him) and (she, her) began attending classes.

a. he, she
b. him, her

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32. The student body (are, is) prepared to vote on the matter.

a. are
b. is

33. The teacher has (spoke, spoken) about this subject before.

a. spoke
b. spoken

34. There are (to, too) many mistakes in this report.

a. to
b. too

35. She (don't, doesn't) come home very often.

a. don't
b. doesn't

36. I (saw, seen) her yesterday.

a. saw
b. seen

PART IV - READING COMPREHENSION

Read the following paragraphs and answer the questions following: Blacken the area beneath the letter on the answer sheet which corresponds to the answer you choose.

Control and correlation of body activities is completed in two ways, through nervous impulses conducted by the nervous system and through chemical substances or hormones. The organs which secrete hormones are called endocrine glands. Collectively, these glands have no ducts and secrete hormones directly into blood, they are also called ductless glands. This distinguishes them from exocrine or duct glands, e.g., salivary and sweat glands.

The nervous system is the body's communication network. The study of the nervous system is called neurology. As the various parts of the body are stimulated by both external and internal environment, messages travel via the peripheral nervous system to the central nervous system where they are interpreted and back via the peripheral nervous system to various parts of the body, which carry out the interpreted messages.

Sensations are the interpretation, in the specialized area of the cerebral cortex, of an impulse arising from the receptors which report changes taking place either within or outside the body. There are three components of the sensory mechanism: 1) Sense organ receptor 2) Pathway to the brain 3) Sensory areas of the brain.

QUESTIONS:

37. Messages travel back and forth from the central nervous system by way of which of the following:

a. ductless gland system
b. peripheral nervous system
c. cerebral cortex system
d. organ receptor system
e. None of the above

38. Impulses are interpreted into sensation by the?

a. cerebral cortex
b. sense organ receptors
c. exocrine system
d. endocrine system
e. None of the above

39. Ductless glands are also called?

a. sweat glands
b. exocrine glands
c. endocrine glands
d. neurological glands
e. None of the above

40. Which of the following is not a part of a sensory mechanism?

a. hormone organ receptor
b. sense organ receptor
c. pathway to the brain
d. sensory areas of the brain
e. None of the above

SECTION B

Read the following paragraphs carefully, then answer the five questions at the end of this section.

NOTE. Start with item number 41 on your answer sheet

Historically, physicians have been among the first in the professions to organize themselves to further their mutual interests. Because of the doctor's professional isolation, he has traditionally felt the need to join with others in his field for purposes of regulating the practice of medicine effecting legislation related to the profession, exchanging scientific information, improving medical education and, at least in previous centuries, simply for socializing.

Fostering and enforcing medical legislation were the primary purposes of the medical societies in this country up to about the nineteenth century, when the societies' regulatory powers were gradually assumed by the states. The first American group seems to have been "a Medical Society in Boston, New England," founded about 1736. This would make it the second professional society in America, preceded only by Benjamin Franklin's "Junto", which dates from 1727. The next medical society appears to have been one convened in New Haven, Conn. about 1739, which did not survive its two-day founding conference. A "Faculty of Physic", formed in Charleston, S.C., about 1755, was primarily occupied with a program to standardize consultation fees and legitimize the charging of a fee for each visit, a proposal which aroused a furor in the press.

With the founding of the American Medical Association (A.M.A.) at Philadelphia in 1847, medical societies assumed the basic character which they have retained to the present time, making the medical profession perhaps the most complexly organized one in the United States.

QUESTIONS:

41. In what year was a medical society organized which lasted for only two days?

a. 1727
b. 1736
c. 1738
d. 1755
e. None of the above

42. The first professional society founded in America was organized in:

a. 1727
b. 1736
c. 1739
d. 1755
e. None of the above

43. Which of the following appears to have caused a considerable controversy?

a. Founding of the A.M.A.
b. Appearance of the "Junto" in America
c. Efforts to justify charging a patient for every visit to the doctor.
d. Increased regulation of doctors by the States.
e. None of the above

44. Enforcing legislation dealing with the medical profession.

a. is a topic that is not mentioned in this reading selection.
b. was a task assumed by the A.M.A. after 1847.
c. is traditionally left up to the individual physician.
d. has become a state responsibility since the 1800's.
e. None of the above

45. The first medical society formed in the United States appears to have been started in:

a. New Haven
b. Boston
c. Charleston
d. Philadelphia
e. None of the above

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PART V - REASONING

Answer the following questions by the answer that best completes the unfinished sentence.

46. The early chinese did not practice dissection, and their anatomy and physiology were fanciful and surely speculative. It is likely, therefore, that:

a. most chinese physicians had an excellent working knowledge of the structure of the human body.
b. surgery was a well develped art in early China.
c. early operating techniques were often based on guesswork.
d. the average Chinese physician had little imagination.
e. None of the above

47. Hippocrates based his practice of medicine on cooperation with nature. Because of this he probably did not believe in:

a. blood-letting.
b. diet control.
c. therapeutic baths.
d. massage.
e. None of the above

48. A doctor's reputation depends upon his adherence to a strict code of ethics as well as his medical skills. As a result, most doctors:

a. must pay their assistants higher wages than other professionals.
b. pay careful attention to what their patients say.
c. keep their patient's medical problems confidential.
d. will only treat certain patients.
e. None of the above

49. The science of medicine is both complex and exacting. This requires its practitioners to:

a. be equally knowledgeable in complicated subjects other than medicine.
b. have some training in using calculators to solve problems.
c. work only with highly specialized assistants.
d. develop their skills intensively and precisely.
e. None of the above

50. The introduction of anesthetics such as ether and choloroform reduced the pain but not the mortality of surgery in the late 1800's. From this, we might conclude:

a. the incidence of surgery was drastically decreased.
b. the number of people dying as a result of surgery was not changed by the inception of anesthetics.
c. it was probably a more painful experience to have surgery in the early 1900's than in the early 1800's.
d. ether was apparently widely used in surgery prior to the early 1800's.
e. None of the above

PART VI - VOCABULARY

25 words are listed below. For each word select another word or group of words meaning about the same thing from the choices provided. Blacken the area beneath the corresponding letters on the answer sheet.

NOTE: BEGIN WITH ITEM NUMBER 51 ON YOUR ANSWER SHEET

51. characteristic
a. humorous
b. typical
c. informative
d. sympathetic
e. None of the above

52. Accumulate
a. enforce
b. consign
c. disburse
d. amass
e. None of the above

53. tentative
a. conflicting
b. provisional
c. simplified
d. limited
e. None of the above

54. imitate
a. study
b. capture
c. copy
d. accept
e. None of the above

55. competent
a. proficient
b. petulant
c. comparable
d. Compact
e. None of the above

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56. discrepancy
a. inference
b. perserverance
c. affluence
d. difference
e. None of the above

57. retract
a. continue
b. stretch
c. cease
d. withdraw
e. None of the above

58. inhibit
a. restrain
b. extinguish
c. introduce
d. select
e. None of the above

59. dissipate
a. disprove
b. resolve
c. scatter
d. continue
e. None of the above

60. encumbrance
a. hindrance
b. agenda
c. scarcity
d. compromise
e. None of the above

61. meticulous
a. beautiful
b. careful
c. delightful
d. painful
e. None of the above

62. innumerable
a. limited
b. valuable
c. few
d. satisfactory
e. None of the above

63. restraint
a. control
b. consequence
c. care
d. code
e. None of the above

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64. congested
a. complicated
b. filthy
c. informed
d. overcrowded
e. None of the above

65. excess
a. correction
b. advantage
c. surplus
d. maximum
e. None of the above

66. precise
a. unstable
b. constant
c. superior
d. persistent
e. None of the above

67. viscous
a. sticky
b. harmful
c. complex
d. wild
e. None of the above

68. adjacent
a. satisfactory
b. usable
c. immoral
d. nearby
e. None of the above

69. substantiate
a. subsidize
b. validate
c. capitulate
d. patronize
e. None of the above

70. align
a. straighten
b. tax
c. criticize
d. depart
e. None of the above

71. formulate
a. clarify
b. fortify
c. compose
d. reduce
e. None of the above

15

72. industrious
a. careful
b. smart
c. honest
d. diligent
e. None of the above

73. revise
a. release
b. refrain
c. retract
d. authorize
e. None of the above

74. distorted
a. annoyed
b. misshaped
c. detailed
d. undone
e. None of the above

75. verify
a. deny
b. capitulate
c. retract
d. confirm
e. None of the above

PART VIII - SPELLING

There are twenty words underlined and numbered in this letter. Opposite the corresponding number below you will find five choices from which to choose the correct spelling. Blacken the appropriate area on your answer sheet.

EXAMPLE The easyist[20] part of the whole test.

20. a. easyist
b. easiest
c. easyest
d. esiest
e. None of the above

On your answer sheet you would blacken the area beneath B.

Dr. Jones:

You have requested me to write you and give a discription[76] of progress shown by the patient[77] Charles Haines. Mr. Haines has made excellent[78] progress since his accident[79] occured[80]. I have been giving rutine[81] treatment similer[82] to that received when under your care. I removed the bandage[83] from his head, the tape was beginning to acravate[84] him, and reduced the wieght[85] on the traction device. His appetite[86] has been good, however, he is irritable[87] and complains that he is drowsy[88] and that his vision is impared[89]. This could possibly be a sympton[90] related to the head injury he received. I hope the information I have provided is acceptable[91], and I plan to procede[92] with my present care until I hear from you. I have presumed[93] that you may have further action that you can recommend[94].

Yours Truely[95],

Dr. James Fiend

Please begin with number 76 on your answer sheet.

76. a. discription
b. disscription
c. description
d. descriptin
e. None of the above

77. a. patient
b. pateint
c. patiant
d. pateant
e. None of the above

78. a. excellent
b. excelent
c. excellant
d. excelant
e. None of the above

79. a. accident
b. acciddent
c. acidant
d. accidant
e. None of the above

80. a. occured
b. occurred
c. ocurred
d. ocured
e. None of the above

81. a. rutine
b. routine
c. ruotine
d. routene
e. None of the above

82. a. similar
b. similur
c. similer
d. simaler
e. None of the above

83. a. bandage
b. bandge
c. bandige
d. bandag
e. None of the above

84. a. agravate
b. agrivate
c. aggravate
d. agravatte
e. None of the above

85. a. wieght
b. weight
c. wait
d. waite
e. None of the above

86. a. appetite
b. appettite
c. appettitte
d. apetite
e. None of the above

87. a. irritable
b. irratable
c. iritable
d. iratable
e. None of the above

88. a. drowsy
b. drowsie
c. drowsey
d. drowsiey
e. None of the above

89. a. impared
b. impaired
c. immpared
d. imppared
e. None of the above

90. a. sympton
b. synmpton
c. synmptom
d. symptom
e. None of the aboe

91. a. acceptable
b. aceptable
c. aceptible
d. acceptiable
e. None of the above

92. a. procede
b. proceed
c. proceede
d. proseed
e. None of the above

93. a. presumed
b. presummed
c. pressumed
d. preesumed
e. None of the above

34. a. recomend
b. reccomend
c. recommend
d. reccommend
e. None of the above

35. a. truely
b. truly
c. truley
d. truelly
e. None of the above

YOU HAVE COMPLETED PART I

PLEASE CONTINUE ON TO NEXT PAGE.

PART VIII - MATH

Work as many of the problems as you can. If you cannot do a problem, go to the next one. When you have found the answer to a problem, locate that answer from the five choices below the problem and blacken that area beneath the corresponding letter on your answer sheet.

EXAMPLE: .25 x .4

a. 1
b. 100
c. .01
d. .1
e. None of the above

On your answer sheet you would blacken the area beneath D.

NOTE: BEGIN WITH NUMBER 96 ON YOUR ANSWER SHEET

96. Change to Arabic numerals: IV

a. 9
b. 6
c. 4
d. 1
e. None of the above

97. Change to Arabic numerals: XI

a. 6
b. 9
c. 11
d. 21
e. None of the above

98. Change to Arabic numerals: XXX

a. 300
b. 50
c. 33
d. 30
e. None of the above

99. Change to Arabic numberals: XIV

a. 6
b. 16
c. 26
d. 56
e. None of the above

100. Change to Roman numerals: 27

a. XVII
b. XXIIV
c. XXVII
d. XXVI
e. None of the above

101. Change to Roman numerals: 6

a. IV
b. IX
c. VI
d. XI
e. None of the above

102. Change to Roman numerals: 19

a. XIX
b. IXX
c. XXI
d. XVIIII
e. None of the above

103. Change to Roman numerals: 24

a. XIV
b. XVIII
c. XXIIII
d. XXIV
e. None of the above

104. Change to a whole or mixed: 3/3

a. 3
b. 1
c. 0
d. 1 1/2
e. None of the above

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105. Change to a whole or mixed number: 15/3

a. 3
b. 4 2/3
c. 5
d. 5 2/3
e. None of the above

106. change to a whole or mixed number: 14/9

a. 1 1/2
b. 1 5/9
c. 1 4/9
d. 1 2/3
e. None of the above

107. Change to a whole or mixed number: 7/4

a. 1 1/2
b. 1 3/8
c. 1 2/3
d. 1 3/4
e. None of the above

108. Change to an improper fraction: 1 1/5

a. 11/5
b. 5/5
c. 6/5
d. 5/6
e. None of the above

109. Change to an improper fraction: 2 5/8

a. 21/8
b. 16/5
c. 10/8
d. 21/5
e. None of the above

110. Change to an improper fraction: 3 1/3

a. 7/3
b. 6/3
c. 9/3
d. 3/9
e. None of the above

111. Change to an improper fraction: 13 3/5

a. 16/5
b. 39/5
c. 44/5
d. 68/5
e. None of the above

112. Reduce to lowest terms: 2/6

a. 1/2
b. 1/3
c. 2/6
d. 4/12
e. None of the above

113. Reduce to lowest terms: 10/12

a. 2/3
b. 3/4
c. 5/6
d. 7/8
e. None of the above

114. Reduce to lowest terms: 27/29

a. 7/9
b. 13/14
c. 3/4
d. 27/29
e. None of the above

115. Reduce to lowest terms: 36/48

a. 3/4
b. 2/3
c. 9/12
d. 6/8
e. None of the above

116. Reduce to lowest terms: 32/48

a. 16/24
b. 4/6
c. 2/3
d. 32/48
e. None of the above

117. Reduce to lowest terms: 1 3/6

a. 1 1/2
b. 1 1/3
c. 18/6
d. 6/9
e. None of the above

118. In the following equation what is x equal to? 1/3 = x/15

a. 1
b. 3
c. 5
d. 9
e. None of the above

119. Change the following percent to a decimal: 6%

a. 6
b. 60
c. .6
d. .06
e. None of the above

120. In the following equation what is x equal to? 9/20 = x/100

a. 3
b. 9
c. 12
d. 36
e. None of the above

121. In the following equation what is x equal to? 8/16 = x/2

a. 8
b. 4
c. 2
d. 1
e. None of the above

122. Solve and reduce to lowest terms: 1/2 + 1/2 =

a. 2/4
b. 1/4
c. 2/2
d. 1
e. None of the above

123. Solve and reduce to lowest terms: 3 1/8 + 4/8 =

a. 3 5/8
b. 3 4/8
c. 3 1/2
d. 3 1/18
e. None of the above

124. Solve and reduce to lowest terms: 10 9/12 + 1 1/2 =

a. 11 3/4
b. 12 1/4
c. 12 3/4
d. 12 1/2
e. None of the above

125. Solve and reduce to lowest terms: 5 1/8 + 1 1/4 + 1/2 =

a. 10 3/8
b. 10 7/8
c. 9 3/8
d. 11 3/4
e. None of the above

126. Solve and reduce to lowest terms: 7 + 5/16

a. 35/16
b. 2 3/16
c. 7 5/16
d. 7 1/3
e. None of the above

127. Solve and reduce to lowest terms: 27/32 - 18/32 =

a. 9/32
b. 1 13/32
c. 45/32
d. 9
e. None of the above

128. Solve and reduce to lowest terms: 7/8 - 2/3 =

a. 5/5
b. 14/24/
c. 5/24
d. 9/5
e. None of the above

129. Solve and reduce to the lowest terms: 3/5 - 7/12 =

a. 1/30
b. -4/7
c. 4/7
d. 10/13
e. None of the above

30. Solve and reduce to lowest terms: 4/9 x 3/12=

a. 1/9
b. 12/108
c. 1/3
d. 12/21
e. None of the above

31. Solve and reduce to lowest terms: 1/5 x 1/3 =

a. 2/15
b. 1/4
c. 1/2
d. 1/15
e. None of the above

132. Solve and reduce to lowest terms: 18 x 7 1/3 =

a. 11/23
b. 126 1/3
c. 132
d. 396
e. None of the above

133. Solve and reduce to lowest terms: 4 1/2 x 2 1/4 =

a. 8 1/8
b. 6 3/4
c. 8 1/8
d. 162/16
e. None of the above

134. Solve and reduce to lowest terms: 3/4 ÷ 1/8 =

a. 6
b. 3/32
c. 1/4
d. -32
e. None of the above

135. Solve and reduce to lowest terms: 1 5/6 ÷ 3 =

a. 1/2
b. 5/6
c. 2/3
d. 1 21/33
e. None of the above

136. Express the ratio as a fraction and reduce to lowest terms:

4 : 6 =

a. 1 1/2
b. 6/4
c. 4/6
d. 2/3
e. None of the above

137. Express the ratio as a fraction and reduce to lowest terms:

7:49

a. 1/7
b. 7/49
c. 7
d. 49/7
e. None of the above

138. Express the ratio as a fraction and reduce to lowest terms:

4:100

a. 4/100
b. 2/50
c. 50/2
d. 100/4
e. None of the above

139. Choose the correct name for the following number:

0.08

a. eight tenths
b. eight one hundredths
c. eight hundredths
d. eight thousandths
e. None of the above

140. Choose the correct name for the following number:

38.5

a. thirty eight and five hundredths
b. thirty eight and one half
c. thirty eight and five tenths
d. thirty eight point five
e. None of the above

141. Choose the correct name for the following number:

0.092

a. point zero, nine, two
b. ninety two hundredths
c. ninety two thousandths
d. ninety two ten thousandths
e. None of the above

142. Express the following as a decimal: thirty six hundredths

a. .36
b. .036
c. .0036
d. 36
e. None of the above

143. Express the following as a decimal: eight ten thousandths

a. .080
b. .8000
c. .0036
d. .800
e. None of the above

144. Express the following as a decimal: two and one thousandth

a. .0201
b. .201
c. 2.1
d. 2.01
e. None of the above

145. Solve the following: 0.8 + 1.5 =

a. 0.13
b. 0.40
c. 0.12
d. 1.3
e. None of the above

146. Solve the folloiwng: .1 + 9 + 0.049 =

a. 10.49
b. 10.049
c. 9.059
d. 9.050
e. None of the above

147. Solve the following: 0.6850 - 0.5903 =

a. 1.2753
b. .0947
c. .1947
d. .1847
e. None of the above

148. Solve the following: 24 - 1.2 =

a. 12
b. 23.8
c. 22.8
d. 25.2
e. None of the above

149. Solve the following: 0.7 x 5 =

a. 1.2
b. 3.5
c. .35
d. 35
e. None of the above

150. Solve the following: 3.14 x .002 =

a. 6.28
b. 1628
c. .0628
d. .00628
e. None of the above

151. Solve the following: 158.4 ÷ 48 =

a. 3.3
b. .33
c. 206.4
d. 20.64
e. None of the above

152. Solve the following: 4 ÷ 36.2 =

a. 9.05
b. .905
c. .110
d. .101
e. None of the above

153. Change this decimal to a fracton and reduce to lowest term: 0.375

a. 1/3
b. 2/5
c. 3/8
d. 3/5
e. None of the above

154. Change this fraction to a decimal: 2/5

a. 40
b. 60
c. .40
d. .60
e. None of the above

155. Change this fraction to a decimal: 9/7

a. .63
b. .777
c. .287
d. 1.222
e. None of the above

156. Solve the following: 23% of 64 =

a. 14.72
b. 1.472
c. 1472
d. 147.2
e. None of the above

7. Solve the following: What % of 20 if 9?

   a. 9/20
   b. 20%
   c. 9%
   d. 45%
   e. None of the above

8. Solve the following: 25 is what % of 100?

   a. 25/100
   b. 1/4
   c. 20%
   d. 40%
   e. None of the above

9. Solve for X in the following proportion: 3 : 5 : : X : 10

   a. 6
   b. 3
   c. 1.5
   d. .75
   e. None of the above

). Solve for X in the following proportion: 0.6 : 24 : : 0.75 : X

   a. 24
   b. 28
   c. 32
   d. 36
   e. None of the above

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